MINING WORLD

DECEMBER, 1949

VOL. 11 No. 12

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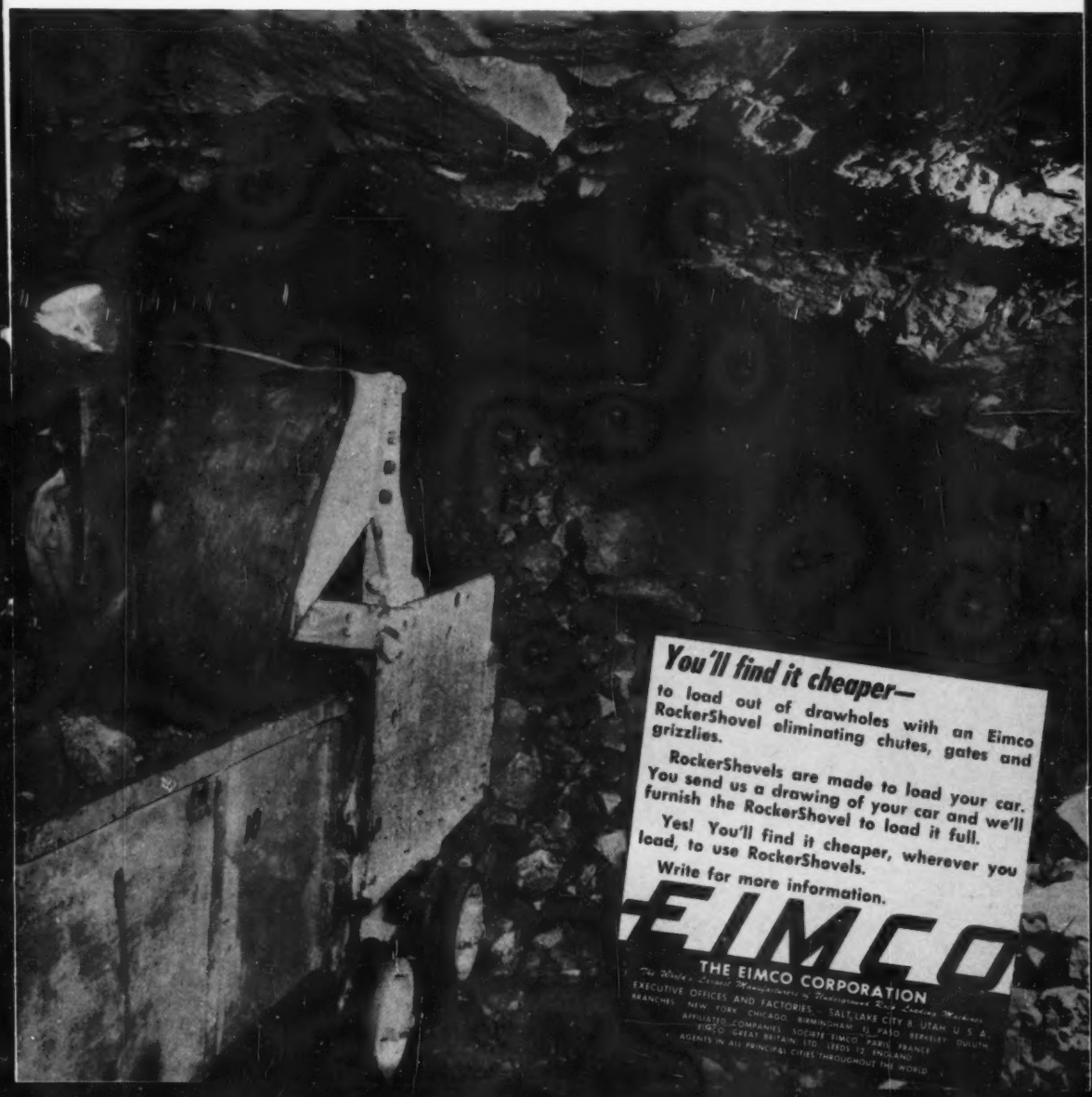
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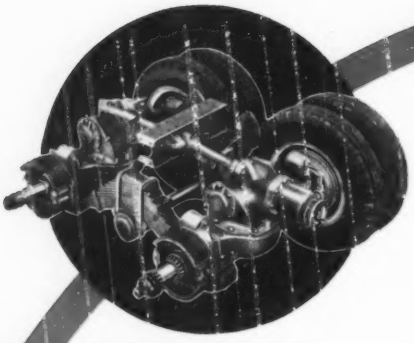

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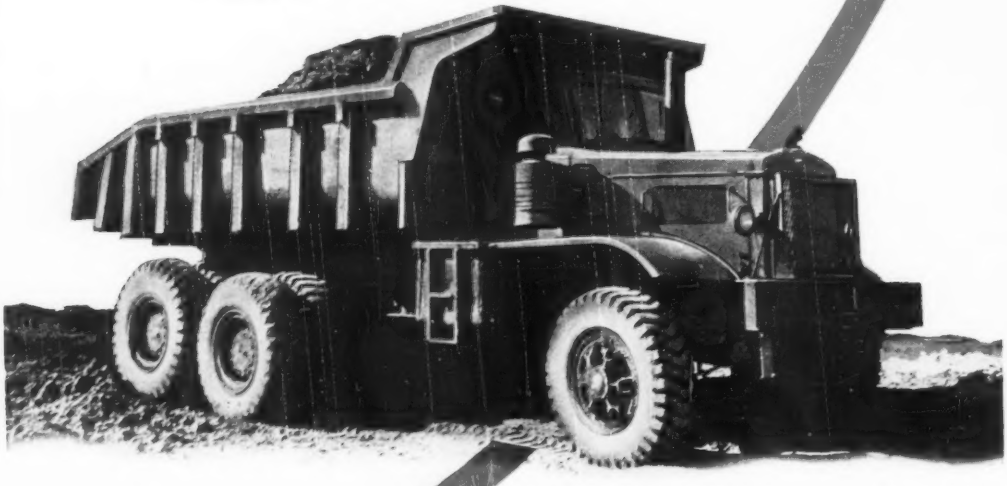

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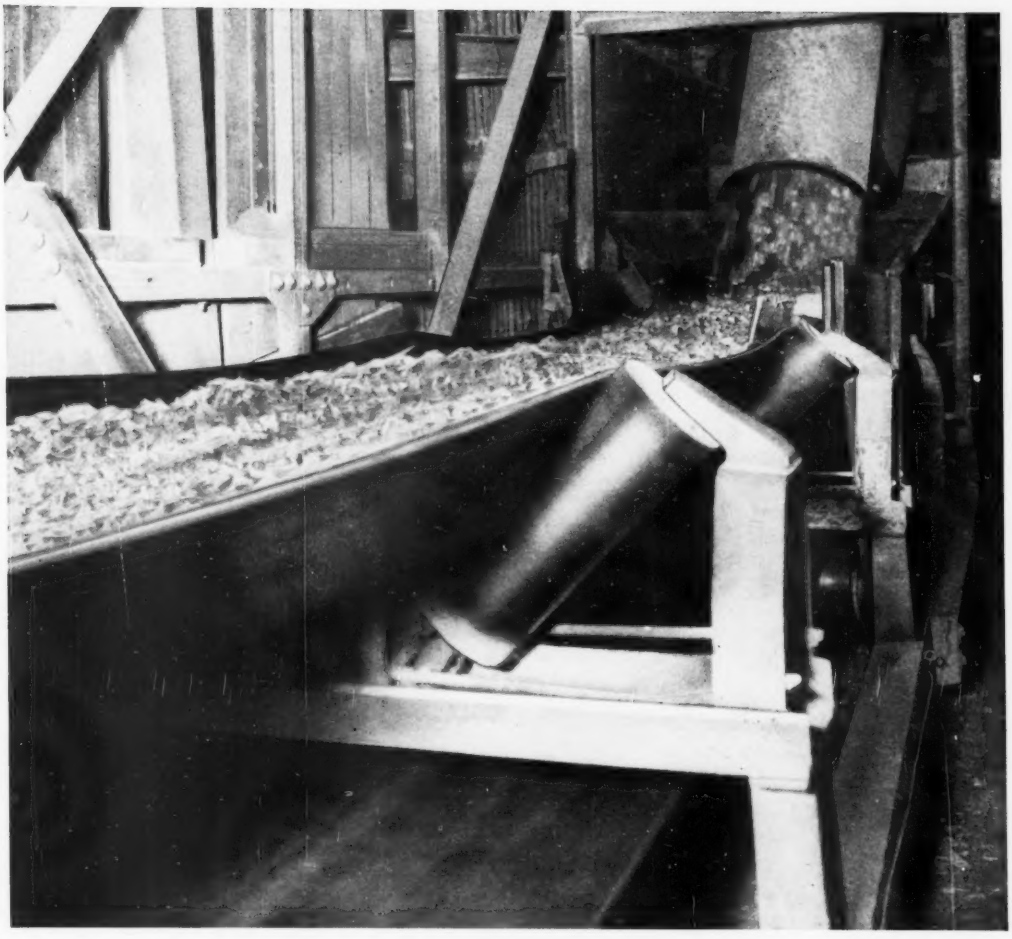
Mack Trucks, Inc., Empire State Building, New York 1, New York. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Limited.



45° Troughing Raises "Pay Load" 30%

From 20% to 30% increased carrying capacity was added to this conveyor belt—*at no added cost*. One of the world's largest pulp and paper mills needed to carry more wood chips to digesters. This had to be done without sacrificing belt life and dependable operation—for failure here stops a whole cycle of high speed operations.

Deep troughing would carry the increased load. So Pioneer engineers designed a belt with ply assembly that would stand troughing at 45° . . . and withstand this extreme flexing. The plies normally outlast covers—tough as the covers may be. So a longer-life cover was developed to fit the service.

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Do you have a belting or hose problem? Give your Pioneer Rubber Mills distributor a chance to help you solve it. His on-the-job know-how is supported by the research laboratories and manufacturing technicians of **Pioneer Rubber Mills** — *the West's Industrial Rubber Goods leader since 1888.*

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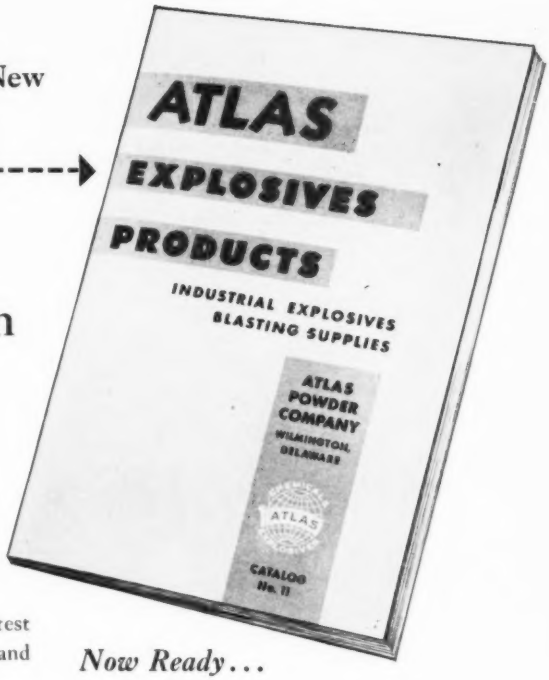

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THE new Atlas catalog is packed with latest information on explosives, blasting supplies, and accessories.

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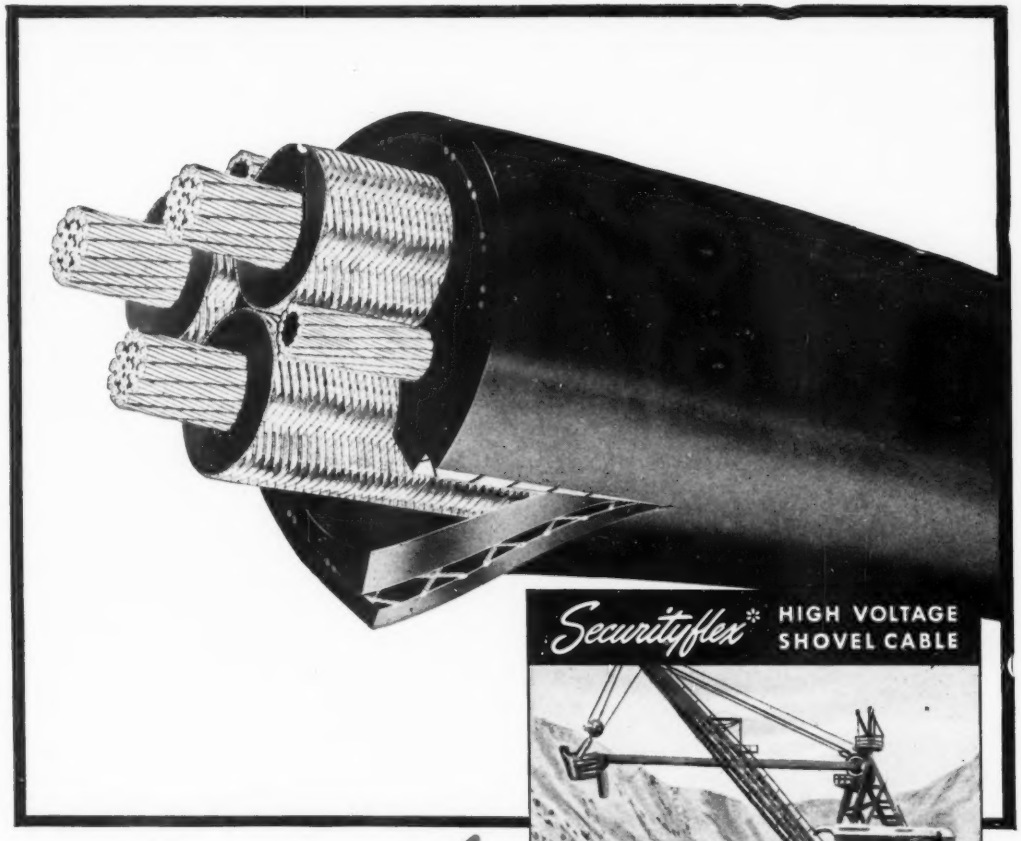

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TO REDUCE DOWN-TIME

DON'T let costly electrified equipment be hampered by cable failures; invest in Securityflex High Voltage (Type SHD) Shovel Cable.

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Write for Anaconda booklet DM 4822, which gives complete information on shovel cable. Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

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STAMINA in crusher shafts

CUTS MAINTENANCE ...RAISES CAPACITY... MINIMIZES DOWNTIME

Extra stamina of the nickel alloy steel used, along with the step-down design illustrated in this sectional view, assures long, dependable life of shafts in "Cedarapids" jaw crushers.

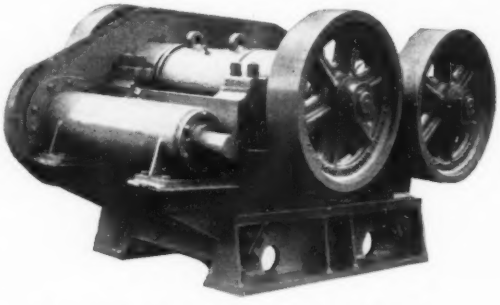
No part of a heavy-duty rock crusher undergoes greater strains and stresses than shafting which transmits power for the crushing action.

For more than 20 years, heat-treated nickel alloy steels... Types 4340 and 3140... have dependably provided the high strength essential in shafts of crushers made by one of the world's largest builders of such equipment... the Iowa Manufacturing Company of Cedar Rapids, Iowa.

In fact, use of nickel alloy steel shafts has been a determining factor in the low maintenance, minimum downtime and high capacities of these heavy-duty units known as "Cedarapids" crushers.

One of the latest additions to this line, the Twin Jaw crusher shown here, often does the work of both jaw and roll crusher in one operation. Type 4340 nickel-chromium-molybdenum steel shafts permit use of high-speed power units, with consequent lower total weight, and increased production.

This grade of steel, and Type 3140 nickel-chromium steel, meet exacting demands for high strength combined with good ductility, toughness and resistance to fatigue. Performance of these nickel alloy steels in heavy-duty crushers indicates how use of the right alloy steel assures substantial economies. Write for our recommendations regarding the best types of nickel steel for your equipment.



"Cedarapids" Twin Jaw crusher with nickel alloy steel eccentric and countershaft... made for primary crushing of rock... range in sizes that produce from 2 to 5 tons, up to 250 to 300 tons per hour.

EMBLEM OF INCO SERVICE
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Over the years, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, stainless steels, cast irons, brasses, bronzes, nickel silver, cupro-nickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

Matched "Caterpillar" equipment keeps rock rolling right along! Price of a standard "Caterpillar" D8 Tractor is $12,805; No. 8A Bulldozer, $2370; No. 25 Cable Control, $1420. (F.O.B. Peoria, prices subject to change without notice.)

STRIPPING overburden and building churn drill access roads are only a few of many jobs handled in stride by this "Caterpillar" Diesel D8 Tractor and matching "Caterpillar" No. 8A Bulldozer. Here you see this versatile team of the Isbell Construction Co. bearing down on an Arizona copper mine project.

Rock work gives equipment a beating, but these precision-engineered "Caterpillar" matched units are built to stand the gaff. Take the 'dozer blade, for instance. Special high-tensile steels make the moldboard as rugged as they come, and the full box section backing provides a blade that can dish it out and take it.

Manufactured by one company, the "Caterpillar" D8 Tractor and No. 8A 'Dozer make a finely balanced unit that can really go to town at low cost for you. Service, too, is centered in one live-wire dealer, so the advantage is yours all ways when you use matched "Caterpillar" equipment!

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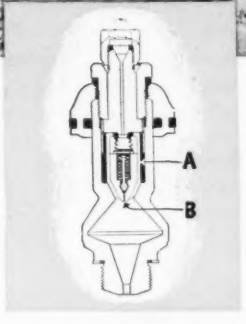

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Typical of the quality built into "Caterpillar" Diesel Tractors are the fuel injection valves. Capsule (A) is easily removable for unit replacement in the field. No adjustments are necessary. Large single orifice opening at (B) prevents clogging and maintains desirable fuel spray characteristics at all times. Countless "Caterpillar" Engines have operated many thousands of hours without the need for capsule replacements.

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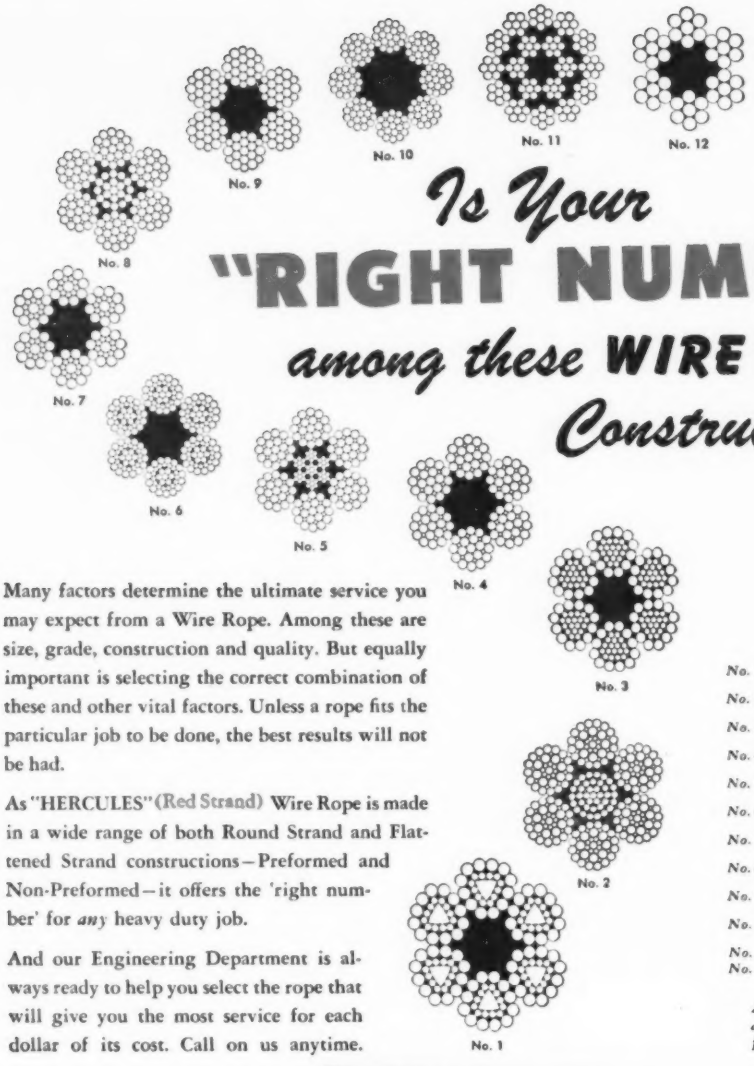

Is Your "RIGHT NUMBER" *among these* WIRE ROPE *Constructions?*

Many factors determine the ultimate service you may expect from a Wire Rope. Among these are size, grade, construction and quality. But equally important is selecting the correct combination of these and other vital factors. Unless a rope fits the particular job to be done, the best results will not be had.

As "HERCULES" (Red Strand) Wire Rope is made in a wide range of both Round Strand and Flattened Strand constructions—Preformed and Non-Preformed—it offers the 'right number' for *any* heavy duty job.

And our Engineering Department is always ready to help you select the rope that will give you the most service for each dollar of its cost. Call on us anytime.

No. 1—Style B Flattened Strand—Hemp Center
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No. 5—6 x 19 Filler Wire Round Strand—Wire Rope Center
No. 6—6 x 37 Round Strand—Hemp Center
No. 7—6 x 19 Seale Round Strand—Hemp Center
No. 8—6 x 19 Round Strand—Metallic Core
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All of these constructions are available either Preformed or Non-Preformed.

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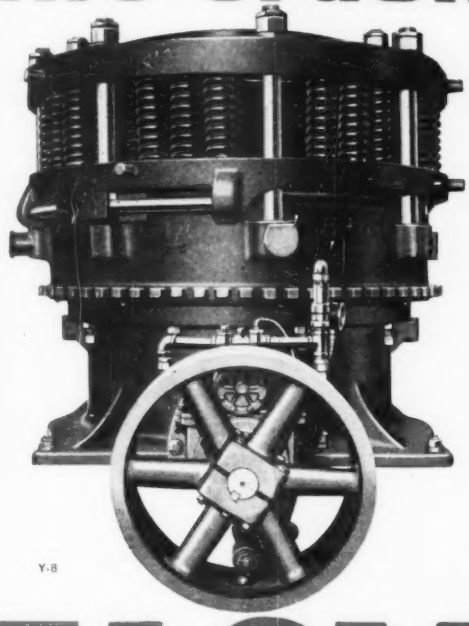
new Style FC fine crushing



- new heavy-duty design for finer crushing.
- longer crushing stroke for greater capacity and a finer, more uniform product.
- new mechanical features for lower maintenance and longer life resulting in lower crushing cost per ton.

Get New Bulletin No. 274

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G-200R Wagon Drills, mounting 4" drifters, run 24-foot blast holes

fast drilling at any angle

The flexible mounting of the versatile G-200R Wagon Drill adapts it for drilling vertically, horizontally, or at any desired angle — line drilling, toe-hole drilling or bench drilling. The sliding cone, with a 36-inch adjustment, offsets ground irregularities or uneven steel lengths.

The G-200R provides fast and easy operation of the more powerful CP drifter drills — with great reduction in drilling costs. Its CP rotary air motor gives a steady feed and quick return, with plenty of power for pulling tight steel.

The wheels can be quickly turned at right angles (tandem) to facilitate line drilling or drilling close to ledge or wall.

Available with CP-50N (3"), CP-60N (3½"), or CP-70 (4") drifters.

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For safety's sake it's a good idea to inspect wire rope fitting attachments for wear and deterioration. Here a Tiger Brand Specialist does it as part of his equipment check...which he can do for you without charge or obligation.

How to stop wire rope trouble—before it starts

Making sure you have the right rope for your job... for your equipment... is a job a Tiger Brand Field Specialist can do for you. He'll also check your rig for the many factors that add up to long wire rope life... proper sheave grooves, safe fittings, proper drum diameter, proper fleet angle. For his job is to make U·S·S American Tiger Brand Wire Rope work best on your machinery.

Tiger Brand is tough and rugged... because it's engineered from raw ore to finished rope under constant, careful U·S·S control. To make sure you get out of it all the long wear that hard usage demands, we've put the Tiger Brand Specialist at your service. There's no charge or obligation. Just contact your distributor or write Columbia Steel Company, Room 1422, Russ Building, San Francisco 4, California.

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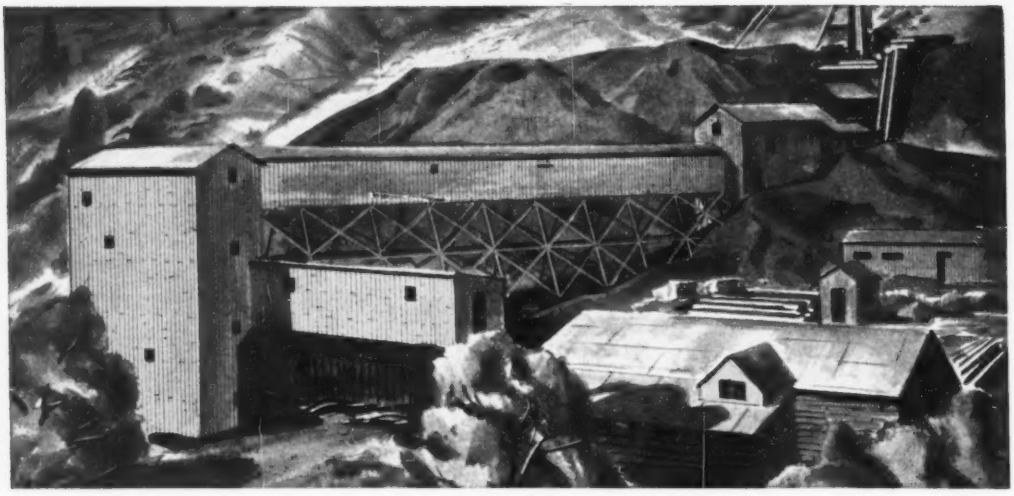
Tiger Brand Tip: A wire rope socket attached with zinc is the only method of attaching a fitting which will develop the full breaking strength of the rope. Your Tiger Brand Specialist can give you information on proper methods.

USS **U·S·S TIGER BRAND Wire Rope**

UNITED STATES STEEL



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Use penta- chlorophenol treated wood

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- PENTA-protection is *clean*—easy to work with.
- PENTA-protection is *economical*—ties and timbers last 2 to 4 times longer.

For additional information about PENTAchlorophenol, write Dow, Dept. PE 198.

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If you're interested in getting more work out of your equipment on less low-cost fuel, with less upkeep, over more profit-making hours . . .

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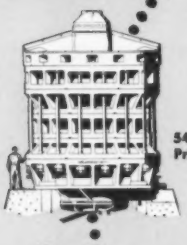
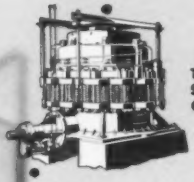
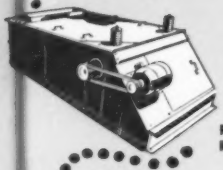
NORDBERG *throughout!*



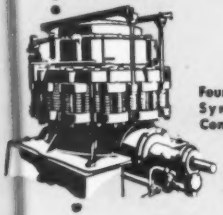
54" super-heavy Nordberg Primary Gyratory Crusher.



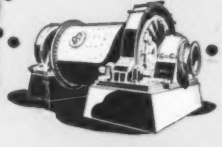
Two 7-foot super-heavy Symons Standard Cone Crushers.



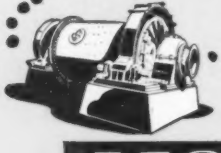
Four 5' x 8' Symons Rod Deck Screens.



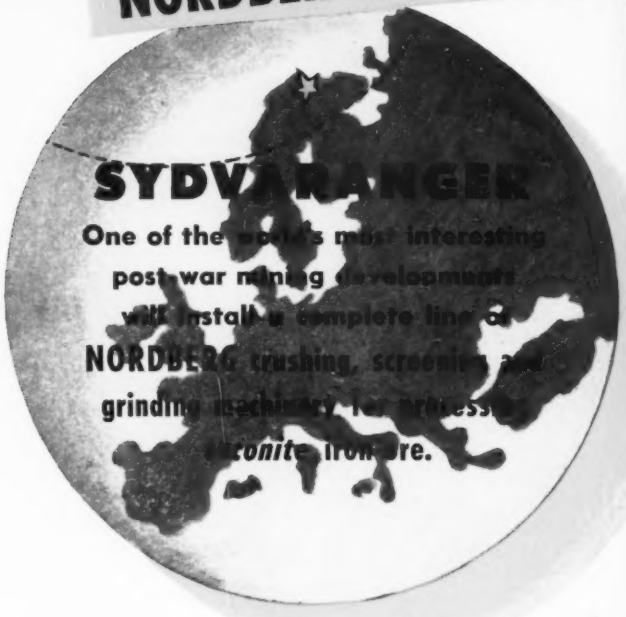
Four 7-foot super-heavy Symons Short Head Cone Crushers.



Two 10'8" x 17'0" Nordberg (Primary) wet grinding Mills.



Two 10'8" x 17'0" Nordberg (Secondary) wet grinding Mills.


SYDVARANGER
One of the world's most interesting post-war mining developments will install a complete line of NORDBERG crushing, screening and grinding machinery for processing taconite iron ore.

TOTALLY destroyed during World War II, the Sydvaranger iron ore crushing and concentrating plant at Kirkenes, Norway, far above the Arctic Circle, one of the world's outstanding pioneer *taconite* operations, is now being reconstructed.

Nordberg Equipment has been selected for all stages of Crushing, Screening and Grinding. The ore is an extremely hard, laminated magnetite, quite similar to the American magnetic *taconites* of the Lake Superior district.

Nordberg is supplying the Sydvaranger Company with an extra heavy duty 54" gyratory for primary breaking . . . the strongest gyratory of this size ever built.

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To obtain a high grade of concentrate, very fine grinding is necessary, and in addition to the Primary, Secondary and Third Stage Crushing Units, Nordberg Heavy Duty Primary and Secondary Ball Mills, 10'8" dia. x 17'0" long, are being installed.

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DRIFTS AND CROSSCUTS

Expanding U. S. Minerals Industry

An industry that produced over $15,000,000,000 in new wealth, the record for 1948, is worthy of consideration as a vast potential in the future development and expansion of the country as a whole. Not only was the dollar volume of mineral production prodigious but the tonnage output surpassed every other previous record established during war or peace.

Most of this mineral output was used at home. Important quantities were shipped abroad to aid in rehabilitation of various foreign countries. Other important uses were in home construction, factories, transportation facilities, to keep the minerals industries and established transportation systems moving in high gear, provide for the military establishment, and, last but not least, to maintain our soil in fit condition to produce good crops.

Regardless of what yardstick is used, the mineral crop of the United States is an outstanding factor in our national economy. The mineral industries in normal times employ over 1,000,000 men and the mineral fabricating industries which include smelting, refining, and other processing branches employ almost 1,000,000 more. The payroll of the industry runs as much as $3,000,000,000 annually, and the purchasing of equipment, supplies, various materials for mines and smelters, as well as for oil and gas exploration, amounts to another $1,000,000,000 annually.

Minerals provide about two-thirds of our total new wealth. By virtue of the work performed in mining, transporting and processing them for ultimate consumption, it is judged that perhaps as much as two-thirds of our population, either directly or indirectly, owe their jobs to minerals, and an even greater percentage of the enduring goods making up the expanding material possessions of the American people result from the minerals industry.

Mining Payrolls and Prosperity

A large slice of the United States population is dependent economically upon mines and mining activities. And the payrolls of mining companies are the basic support of large and, in some cases, very important communities. No real prosperity can be enjoyed by the country as a whole unless the mining industry is prosperous. This is almost a basic axiom of modern business. Any substantial loss in the purchasing power represented by the men engaged in removing ores and minerals from the mines of the United States would be a severe blow to the economy of the nation.

A recent survey made in a representative mining state of the West shows that for each worker employed in mines, two and two-thirds additional workers were occupied in local service industries. This makes a total of 12 wage earners and dependents who derive their means of living and their ability to buy goods and services from the operation of mines in the community and, furthermore, one wage earner in the mines supports a total of 12 wage earners or dependents plus the new wealth that is created by the mineral product of the mines.

A conservative estimate of the multiplication of services based on the production of mines is that for each dollar paid to a mining company for minerals at least five dollars is paid for transportation and to plant workers who handle or manufacture the finished product.

A small part of the selling price is all that can be attributed to minerals in the ground, and even after they are extracted the value at the mine head is but a small part of the price that the ultimate consumer pays for them. An example of this is the average price per pound for iron which is only about one-third of a cent at the mine, and at lower lake ports or Pittsburgh the price rises to only about three-quarters of a cent per pound.

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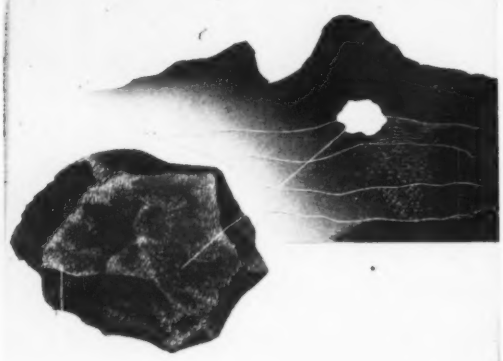

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On the other hand, fabricated shapes and forms demand a much greater price, ranging, at current prices, from two and one-half a pound upward, depending upon the type of product. In the form of an automobile the price may rise to as much as 75c per pound, and in such machines as typewriters or calculators the price might rise as high as six or eight dollars per pound. The same thing holds true for copper. For a price of 15c per pound a fabricator will buy copper and turn it into a form which will sell for at least twice as much per pound.

If savings in the cost of mineral raw materials endanger the future supply of these materials it might well prove to be false economy in the long run. It is necessary to furnish employment in the minerals industry and in other industries upon which our national security depends.

Devaluation, Strikes and Metal Markets

Immediate effect of devaluation of the pound sterling was felt especially in the world's gold mining areas. As mentioned elsewhere in these pages, gold mining activity increased tremendously in South Africa and Australia with frenzied transactions taking place in the Johannesburg stock exchange. Sub-marginal gold mines took a new lease on life and a number of mines, on the verge of shutdown, came to life. At this writing, excitement in the stock exchanges has subsided sharply and share trading is waning. Nor was all good news good to the gold producers overseas. Immediately after the devaluation, the South African labor unions began clamoring for all sorts of wage increases, holiday bonuses, and other items, and so goes a fair percentage of the increase in the price of gold.

In the United States, gold mining scarcely reacted to the devaluation, whereas Canada received a 10 percent increase of Canadian gold by virtue of a devaluation of 10 percent in the Canadian dollar.

The increase in the price of gold throughout the sterling area amounted to approximately 43%—a jump from 173s. 3d. to 248s.

Under the new sterling price, the position occupied by tin is peculiar. The British government has reopened the London Metal Exchange, dealing in tin only and has ceased buying tin in bulk. A paradox of international market manipulation is offered by tin as the United States price has dropped from $1.03 to $0.95 a pound, while in the United Kingdom the price to consumers has been raised from £569 to £739 per ton, a queer manipulation considering that an estimated 30,000 to 40,000 tons overproduction is scheduled for 1950 at current output and consumption.

The rest of the base metals, on the other hand, occupy a vastly different position. Lead, zinc and copper prices have oscillated rather strongly over the past several months. On the American scene it was only natural to assume that, as a consequence of the recent strike in the steel industry, base metal prices, especially zinc used in galvanizing, would drop. Instead, zinc rose as did copper.

The result of the pound devaluation left American metals high on the shelf as, in most currencies, it requires more money to buy a pound of metal from the United States than it did before devaluation, and other nations that did not devalue are willing to shop in cheaper currency countries for metals if they can get them. However, one item stands out above all others in international commerce today and that is the dollar. Nearly all nations are scrambling to obtain dollar exchange.

Turning back to prices of the base metals, let us look at the United Kingdom prices for the most important before and after breaking the price of sterling. These follow: Copper, £107 10s. to £140; lead, £85 5s. to £122; zinc, £63 10s. to £87 10s.; and aluminum, £93 to £112.

Certainly these price changes will put a strain on some parts of Britain's economy with consequent repercussions on U. S. metal markets. —J. B. D.

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Empire Star Mine at Grass Valley, Calif., one of the nation's oldest, uses more than a mile of Bethlehem Purple Strand rope to rig its modern hoisting equipment. The illustration shows 1-in. 6 x 19 Purple Strand attached to the skip car and wound on the main hoist drum.

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CAPITOL CONCENTRATES

"BUY-AMERICAN" CLAUSE FOR U. S. MINERS MAY BE IGNORED IN FAVOR OF FOREIGN NATIONS

As clear a statement as ever was made by a government agency about the present attitude toward the domestic mining industry is contained in a letter written by Secretary of the Treasury Snyder to Chairman Carl Vinson of the House Committee on Armed Services when disapproving the Baring bill H. R. 5697. This bill was designed to implement the "Buy-American" clause of the Stockpile Act of 1946 by directing the Munitions Board to purchase domestic metals and minerals "to the extent available" at prices "up to 50 percent above the prevailing market price." Under the "Buy-American" Act any amount above the prevailing market may be paid, but 25 percent is the conventional policy limitation.

Says Secretary Snyder: "This would appear to be in basic conflict with the United States foreign financial policy. Since the end of the last war this government has contributed more than $20 billion in an attempt to bring about the economic recovery of friendly foreign nations, and additional expenditures for this purpose are in prospect. Roughly half of the sum already expended has been in the form of loans, repayment of which depends primarily upon the ability of the debtor countries to earn dollars by selling goods and services in the United States.

"Both economic recovery and the repayment of loans depend in large measure upon the ability of these countries to export to the United States those goods and services which they are especially adapted to produce. Among such products, as several of the provisions of the Foreign Assistance Act of 1948 recognize, are the metals and minerals constituting the raw materials which are essential to the economy of the United States, including our peacetime production and industrial preparedness for the national defense."

The flaws in the Secretary's argument will be clear to all. The fact that the U. S. mining industry apparently may be slated for sacrifice on the global altar no longer can be questioned.

● *New Chairman for SEC*

Edward T. McCormick of Arizona will replace Edmond M. Hanrahan as chairman of the SEC. Perhaps mining securities will get something of a break now that a chairman has been appointed from a mining state. Here's hoping!

● *Tunnel Funds Are Included*

Under the Interior Appropriations bill finally passed by Congress, the United States Geological Survey gets $15,988,000 and the Bureau of Mines $23,987,500. This considerable piece of change includes $250,000 to extend and operate the Leadville drainage tunnel.

● *New Tariff Slashes Made*

Tariff concessions made to date under the new Trade Treaties Act include cuts on talc, soapstone, chalk and ferrochrome. Here we go towards that better world—and more to come.

● *Contract Authority Reduced*

After an interminable amount of argument the Senate-House conferees finally agreed to reduce the Munition Board's contract authority by $100 million, leaving the figure at $175 million instead of $275 million. The Senate had cut the figure to zero, the House had provided $275 million and they could not get together until the closing days of the session when the 175 figure was agreed to in desperation.

Representative Mahon, chairman of the conference committee which settled on the $100 million slash, stated verbally on the floor of the House that the conference committee expects the "Buy-American" clause in the Stockpile Act to be strictly adhered to. However, the betting is strictly against American producers ever getting their fingers on much of the money.

● *Many Nonmetallics Dropped*

At about the last minute conferees on H. R. 5268 dropped percentage depletion for perlite, diatomaceous earth and a considerable number of other nonmetallics, including sand and gravel. Chairman George of the Senate Finance Committee explained: "It may be said in all frankness that many of the metals and minerals, or at least some of them, included in the amendment do not require discovery effort. They are plain and obvious, and they simply have to be mined or extracted from the deposits. As to certain other of these materials, we had no real evidence as to whether other competing minerals and metals had been given a percentage depletion allowance." George also said his committee would review the whole matter of depletion early in 1950.

● *Secretary Would Rule*

The mining people interested in S. 2105 should understand that the reference to "adequate depletion and depreciation" does not necessarily mean that the Interior Department would give each contractor the 15 percent allowed under the Revenue Act. The inclusion of the word "adequate" indicates that the opinion of the Secretary of the Interior would rule as to what is adequate for the particular mine. Perhaps a mine which had already enjoyed a total of 100 percent or more depletion or depreciation would get nothing.

● *Board Reaffirms Position*

The new member of the Munitions Board, Major General A. B. Quinton, has, according to reports, re-endorsed in a speech delivered in Spokane, Washington, the position the Munitions Board has held consistently with respect to stockpile purchases. It has, said the General in a prepared speech, "been our firm policy, and one that we want to maintain, to conduct the stockpile for its primary purpose and not to deviate to accomplish side objectives." This is another direct slap at the Senate Appropriations Committee's report and at legislation such as the Murray-Engle bill directing the board to "Buy-American" and would fill the stockpile with domestic minerals where available even if at higher than market prices.

● *New Reserves Described*

The have-nots take another beating. The Bureau of Mines has just announced it has published a report on one of the largest undeveloped sulphide orebodies in the eastern United States, in Carroll County, Virginia.

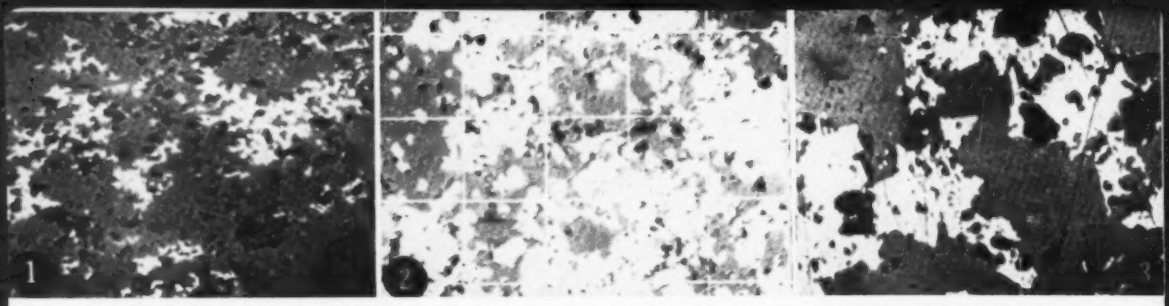
● *Now Is the Time*

If any mine incentive payment bill is to be passed at the second session

Continued on Page 67

Munitions Board Rejects Manganese Purchase Plan

The bill H. R. 2767, which calls for the purchase of 4,000,000 long tons of manganese from domestic sources, has had the same treatment from the Munitions Board as all similar measures designed to increase domestic strategic and critical mineral production. This particular bill went to the House Armed Services Committee rather than House Public Lands where other mining bills have been referred. But the Munitions board gave Armed Services the same old song and dance—no purchases above the current market and complete domination of specification and amounts must be left to the board. As Secretary of the Treasury Snyder says, such measures as this would interfere with our foreign financial policy if they became the law.



To point up the difficulties that have to be solved in reducing taconite to a usable product, the microphotos reproduced above indicate that not all varieties of taconite are alike. For reference, the magnetite is shown as white and the slate and chert as gray. No. 1 is a magnification of a section taken at 200 diameters. Note that the magnetite is disseminated very finely. Commonly, grinding to minus 600-mesh is necessary to liberate the iron from the gangue in this combination. Also, the percentage of magnetite is low, probably less than 10 percent. No. 2 is a polished specimen with a 200-mesh grid superimposed. The magnetite is in larger blebs and crystals in this section, but it is still quite finely divided. Using the grid as a gauge, it is evident that some of the particles in this print are larger than 100-mesh. No. 3 shows a taconite sample magnified 200 diameters that will make a much better milling rock than No. 2, as the magnetite is in compact crystals and groups and will mill much more easily than rock with finely disseminated iron mineralization.

HANDLING MESABI'S TACONITE

Erie Mining Company's goal 10,000,000 tons of concentrates yearly. Recent application for water permit indicates that plans will be carried out.

The disclosure in mid-October that the Erie Mining Company has applied to the Minnesota Department of Conservation for a permit to procure water for proposed taconite beneficiation plants with a combined capacity of 10,000,000 tons of concentrates per year indicates that plans are taking form to go ahead with taconite treatment as reported in MINING WORLD'S *Iron Range Edition* of September, 1947.

Elton Hoyt II, president, Erie Mining Company and senior partner, Pickands Mather & Company, announced that the permit was a necessity for the construction of the proposed plants but that the decision has not been made yet as to whether the plants will be built.

Specifically, Erie Mining Company is seeking permission to build a canal between Upper and Lower Partridge lakes on the eastern Mesabi Range and it is proposed that the company will build other adjuncts such as dams and spillways at Upper Partridge Lake. These installations would supply water to the future plants at the rate of 12,000 gallons per minute.

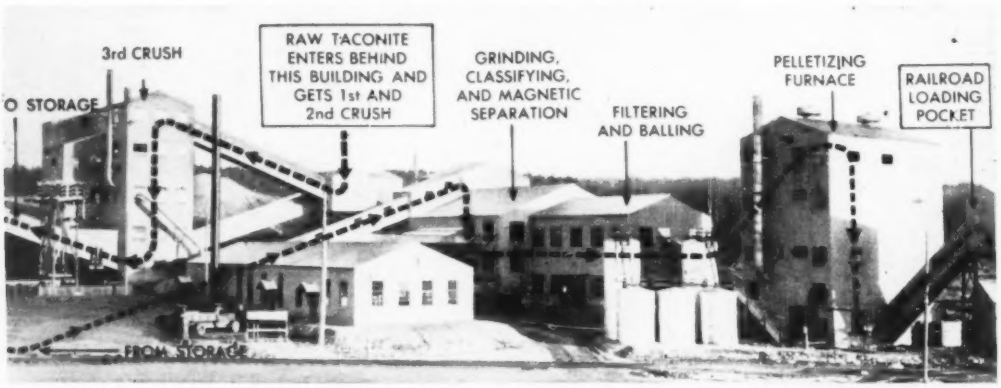
Mr. Hoyt said that the plan does not contemplate any interference with the normal level of Upper Partridge Lake. The waste material or "tailings" would not be dumped in lakes, he said, but on wasteland areas north of the range which the company has acquired for that purpose.

Goal 10,000,000 Tons Yearly

If the program goes through as hoped for, the effect on employment in the range communities would be substantial, Mr. Hoyt said, especially as to mining labor because three tons of taconite must be mined to produce each ton of concentrated ore.

Mr. Hoyt went on to say that the first large plant contemplated would have capacity to produce 2,500,000 tons of concentrates a year. If this plant should be operated successfully, the plan calls for adding a similar unit bringing the capacity to 5,000,000

The Erie Mining Company's taconite pilot plant near Aurora, Minnesota, on the famous Mesabi Range, was put into operation during the summer of 1948. Details of the operation are told in the accompanying article.



tons a year. As further depletion of the available direct-shipping ores makes necessary increased production of taconite concentrates, other units or another separate plant with capacity to produce an additional 5,000,000 tons a year could be added, so that the total plan may involve construction of a plant or plants able to produce 10,000,000 tons of concentrates annually.

Eliminating Bugs

For some years Erie Mining Co. has been experimenting at its laboratory at Hibbing, Minnesota, with processes for obtaining from taconite an iron ore concentrate suitable for use in blast furnaces. Last year it put in operation a "preliminary plant" on the Mesabi Range near Aurora, Minnesota, using full-scale equipment.

The preliminary plant, with capacity of 200,000 tons of concentrate per year if run continuously, has up to now been operated intermittently for the purpose of making equipment tests. Experience to date, Mr. Hoyt said, indicates that if the larger plants are built, they will be designed to use processes similar to those used in the preliminary plant.

Continuing Experimentation

The Erie plant is a "preliminary" or pilot plant which so far has been operated intermittently for the purpose of gaining experience and making equipment tests. Various types and combinations of equipment are being tried, and the processes used up to this time are subject to change as experimentation continues.

Taconite, being the hardest material mined in the Lake Superior district, places a severe strain on all equipment used in its handling and processing. For this reason, and also because three tons of taconite must be processed to obtain one ton of finished product, special emphasis must be placed on cost control.

In the first step in mining taconite, the drilling of blast holes, the Erie company is experimenting with jet piercing. This method cuts the blast

D. C. Jackling, pioneer in the processing of taconite.

holes with a high-velocity kerosene-oxygen flame accompanied by a water spray. Early tests indicate that the jet piercing equipment will prepare holes many times as fast as conventional drills. It also eliminates the need for bit-sharpening shops and difficult handling of large bits. After blasting, the broken taconite is picked up by large Mesabi-type electric shovels equipped with 4 cubic yard dippers having great shock-resistance, and trucked to the concentrating plant.

Present Concentration Practice

The concentrating procedure now being used in the plant embraces the following steps:

Taconite is put through three sets of crushers which reduce it to fragments of less than 6, 1½, and ⅝", respectively, the material traveling between the crushers on conveyor belts. After the third crushing, the material is deposited in a 6,000-ton storage bin, large enough to store a continuous supply for around-the-clock operation of the pilot plant.

The crushed material is next fed into a 12' rod mill for preliminary grinding. The grinding operations are designed so that the waste siliceous material will be discarded as quickly as possible to avoid unnecessary grinding. When the ground particles emerge from the rod mill, a magnetic cobber makes the first separation of usable and waste material, casting off the first tailings at this point.

The fine-grinding operation is then performed in a 12' ball mill. After a second magnetic rejection of tailings the material goes to a spiral classifier. The material 100-mesh or finer overflows the classifier, the larger particles automatically returning to the ball mill for further grinding.

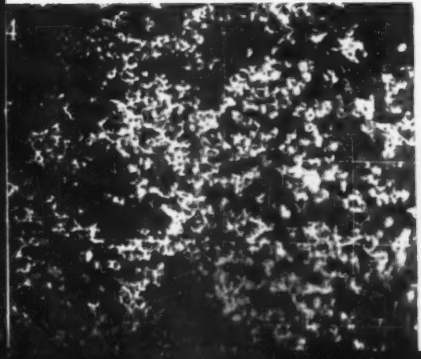
The minus 100-mesh material from the classifier is next sent through a series of finishing magnetic separators, designed to reject the remaining siliceous particles and to retain the concentrate, which will contain approximately 63 to 65 percent iron, and representing by weight one-third of the original taconite. The concentrate then passes through a filter which reduces the water content to about 10 percent.

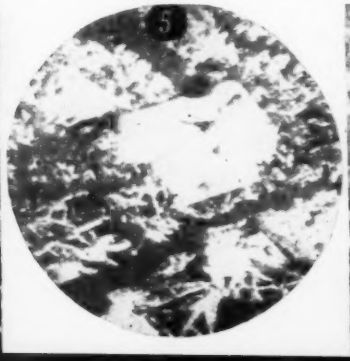
Progress with Agglomeration

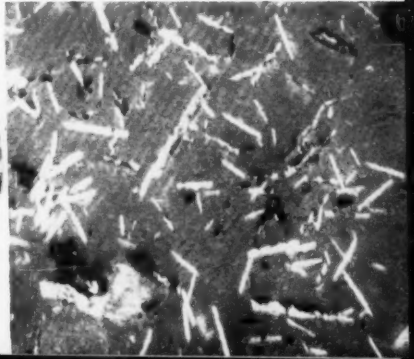
Little doubt exists that the finely ground concentrate can be sintered according to standard practice. However, because the material has been reduced to minus 100 mesh, it is desirable that some other method be worked out. The process now being tested calls for agglomerating the finely ground concentrate into balls hard enough to stand repeated handling and large enough to serve as a suitable charge in blast furnaces. Many variations in these steps are being tested. The present setup calls for feeding the concentrate into a rotary balling drum, 8' in diameter and 24' long, where the concentrates are rolled into roughly spherical balls from ½ to 1½" in size. The balls move to the pelletizing furnace and are baked at high temperature, changing from magnetite to hematite in the process.

The finished pellets must have adequate strength to withstand loading in railroad cars, loading into vessels through chutes of Upper Lakes docks, unloading at Lower Lakes ports, transshipment by rail, and subsequent unloading and handling at the blast furnaces.

No. 4, magnified 200 diameters, demonstrates the extremely fine texture of a specimen of non-magnetic taconite. A 200-mesh grid is superimposed, indicating the very small size of the hematite in what is principally a suartz gangue. No. 5, magnified 300 diameters, is magnetite occurring with needle-like or platy hematite. This is a mixed taconite, consisting of magnetic and non-magnetic minerals. Note the much larger size of the magnetite crystals. No. 6 is of extremely fine hematite crystals magnified 500 diameters. Material such as this is beyond the possibility of treatment by present-day metallurgical methods, due to extreme fineness.







General view of Western Perlite Corporation's popping plant at Phoenix, Arizona. The bins for storing the various sized popped products and the pipes attached to the cyclones are shown. Aluminum paint makes the plant shine brilliantly in the Arizona sunlight. Center: L. H. James, plant manager.

One of the rotary popping furnaces that account for about one-half of the company's 50 cu. yds. of sized material per shift. The slope of the furnace can be estimated from this picture. At the right are the loading bins with facilities for three sizes of product.

PERLITE, COMING NONMETALLIC

Western Perlite Corporation pioneers a new industry in Arizona utilizing local deposits to produce 50 cu. yds. per day of light-weight aggregate

The weight of nonmetallics mined last year, excluding petroleum products, approached 615,000,000 tons and the industry is mining and processing a greater tonnage of this class of minerals each year. One of the latest comers to this important segment of the industry is perlite. Since the war's end it is estimated that no less than 50 deposits of this industrial mineral have been opened up. Investment in this new industry already runs into the millions.

All of the working deposits of perlite are west of the Mississippi. Nearly all the operations are adjacent to railroads or paved highways. This is essential as the processed perlite, by virtue of its exceedingly light weight, demands favorable transportation rates.

One company that is making a paying thing out of a perlite deposit is the Western Perlite Corporation of Phoenix, Arizona. Edward E. Swift is president and general manager and Earl F. Hastings is secretary-treasurer. The company sells a sized product under the trade name of Wes Perl, and at present has an output of about 50 cu. yds. per shift of finished product.

Perlite, Mineral and Product

Perlite in the crude state is a glassy solid that, as a rule, varies from a dense black mass to a light grey or white granular aggregate. The chief deleterious element so far as processing the mineral is concerned, is sulphur.

In the field of construction materials perlite promises to make competition for a number of other light weight materials among which are pumice, diatomite, vermiculite, and others of lesser importance.

Grimes Lloyd busy at putting down a hole in the perlite deposit. The extreme friability of the rock is indicated by the drillings that encircle the hole. The sinker gives good performance and upkeep amounts to only a trifle.

Among the many uses to which perlite is put, and these uses expand by the day, are the fabrication of bricks, blocks, slabs, roof decks, plaster and stucco. Furnace insulation, inside and out, is another important application. Also, perlite is finding growing use in the abrasives field. Other applications are in insulating hot and cold pipelines, as a loose-fill insulation, as acoustical insulation and as a filtering agent.

Advantages of perlite over other light weight materials may be summarized as follows: It is a fireproof, mildewproof, inorganic material that is resistant to most common chemicals. Handling or working with it in its many forms saves time and labor due to its light weight. Insulating properties offer some of perlite's greatest advantages as the insulation factor varies from four to seven times that of other light weight materials. Moisture is not attracted to it and the porous nature of the prepared products permits nailing and sawing of the fabricated forms. Used as a wall filling, it will not settle between the spaces, but remains as originally placed.

Perlite owes the properties listed above to a peculiar attribute, the effect of suddenly applied high temperature upon the crude ground material, the result of a certain percentage of contained water. This combination "pops" the material; that is, it is expanded to several times its original volume.

The popping can be controlled and

products of a variety of densities obtained.

Wesperl's Mining Operations

The mine, an open pit operation, is about 55 miles east of Phoenix and four miles west of Superior. The deposit lies south of the paved highway about three-quarters of a mile and is connected to the pavement by a dirt road that offers no difficulty to the passage of the 25 ton diesel-powered trucks that move perlite to the popping plant in Phoenix.

Mining is done on contract by James Herron, Jr., who strips, breaks and loads the ore on semi-trailer type dump trucks that are operated by the Owens Transportation Company.

The ore falls into two general classes, onion skin and granular. Onion skin ore breaks into chunks resembling sizeable onions from which the material peels in concentric layers. Although this is good grade material, the granular type is preferred. Granular ore breaks into small particles varying from wheat kernel to marble size and thereby rates higher for crushing and popping purposes.

At the time MINING WORLD visited the property mining had been underway at two pits and a total of 55 carloads of crude ore had been sent to Phoenix.

The open pit where mining was proceeding is mined by benching. A varying layer of overburden from 0 to 6 or 8′ is first removed. Thereafter, bench rounds are drilled with a Chicago Pneumatic sinker powered by a Le Roi 105 portable compressor. Six foot holes are sunk about four feet apart and four feet from the rim of the pit and three benches are removed to reach the floor. Timken detachable bits are used. Each one of these is good for 40 to 50′ of hole due to the friable nature of the orebody. Three changes of bit are used in the length of hole ordinarily put down.

Shooting a round is a problem. Exceedingly brittle and friable, the ore shatters and breaks into a great many small pieces. The desired effect is to have as few fines as possible and to this end much experimental work has been done with different types of explosives. However, the nuisance still hampers maximum production. At present blasting is done with 40 per cent Atlas dynamite.

After breaking, the ore is loaded into the trucks with a Bay City ⅜ cu. yd. power shovel. As the broken rock is comparatively light weight, it is loaded with dispatch, a matter of minutes being sufficient for loading a truck.

Ore Reduction

The ore is unloaded from the ore trucks in Phoenix, the material going directly to a 36″ Dixie Mogul, Jr., hammer mill approximately 15 tons

Edward E. Swift, president, Western Perlite Corporation, stands at the foot of a good face of perlite and examines the structure while Grimes Lloyd wrestles a Chicago Pneumatic sinker and puts down a hole for a bench round.

per hour capacity. This machine reduces the ore from plus 12″, the maximum size, to minus 1″ and it passes to a truck that moves the broken material about 200 yards to the surge bin. A bucket elevator raises the crushed ore to a vibrating screen that sizes the run of mill product into three cuts, a minus ½″, a plus ¼″ and a plus ⅜″. The plus ⅜″ cut is reduced by a 18″ Symons disc working in closed circuit with the surge bin and the oversize returns to the surge bin in reduced size. Current plans include installation of a jaw crusher and rools to eliminate the above mentioned hammer mill.

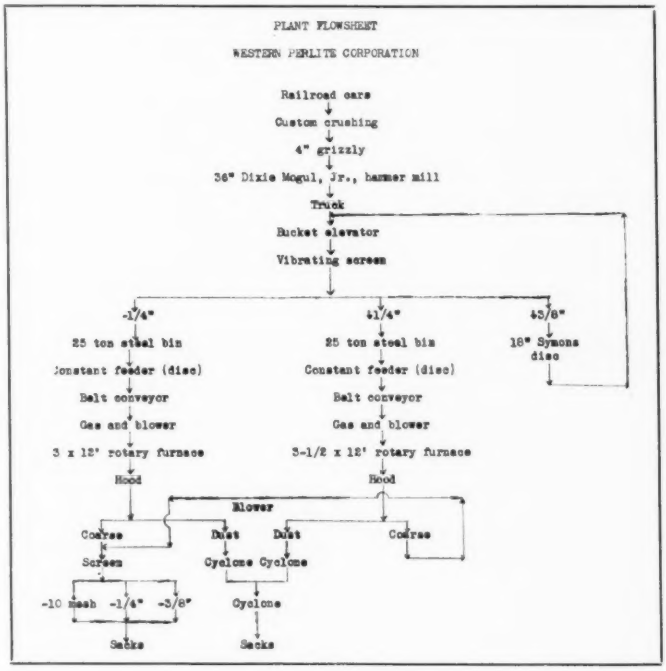
Minus ¾″ Circuit

The minus ¼″ material is conveyed to a 25 ton steel bin which is capable of storing sufficient feed for the furnace for two 8-hour shifts. Sized ore is bled off from the bin by means of a constant disc feeder and is taken by a short belt conveyor to a blower that feeds the material into a 3 x 12′ rotary furnace, mixing the ore with gas as it enters.

Amount of feed blown into the furnace can be controlled by varying the speeds of the feeder. This acts as a control on the input and regulates the amount of material that goes through the furnace, allowing a long or short exposure to the heat.

Approximately one minute is required for 3/16 or ¼″ material to travel the length of the 12′ furnace, which is pitched about 1:10, from which it emerges in the popped condition. Smaller sizes go through more rapidly due to the forced draught.

The popped perlite is drawn into a hood at the end of its trip through the furnace, the dust going to a 36″ shop manufactured cyclone and the coarsely popped perlite discharging onto a vibrating screen. Three sizes of material are taken off the screen—



Edward E. Swift inspects the Le Roi 105 portable compressor in use at the mine. This machine has given satisfactory service and supplies all the air needed around the open pit.

minus 10 mesh, minus ¼" and minus ⅜", indicating the rather narrow range to which the sizes of the finished product is held. These sized cuts of the finished product are run into bins an drawn off into paper sacks for shipment as commercial Wesperl perlite.

Plus ¾" Circuit

No essential difference exists between the course of the minus ¼" and plus ¼" material as it passes from the constant disc feeded to the belt conveyor through the gas jet and blower to another rotary furnace 3½ x 12'. A hood of the same type as is functioning at the discharge end of the minus ¾" furnace draws the popped material into the circuit, the fines going to a 6' cyclone and the coarse product passing to the same vibrating screen where it is sized as detailed in the foregoing section, after which it passes to the bins for sacking.

Operational Tricks

The blowers used in both furnaces are propelled by superchargers reclaimed from B-29 bombers. Powered with 25 hp motors they are capable of turning up 6,000 rmp or higher. The use of the discarded superchargers has proved satisfactory and economical.

The ordinary temperature of the furnaces is 2,100 degrees F. This puts a strain on the linings and frequent replacements were necessary until the management worked out the arrangement briefly detailed below.

Fire bricks manufactured by the Denver Fire Clay Company are used for liners of the furnaces and perlite cement fillers are used for the space between the inner and outer shell.

Results are better than with any other lining tried thus far. Research is continuing and the management is active in experimenting with new and untried ways of preparing furnace linings.

Disposal of Product

Nearly all of the company's output is absorbed in Arizona, Phoenix and Tucson being the largest takers. Principally, it is used for plaster in the above mentioned areas. The use that rates second in importance is for concrete.

The weight of the finished popped perlite is about 15 lbs. per cubic foot. Some variance of weight results from the size of the final product; that is, a small globule naturally is heavier than a larger one.

Eight types of finished product are included in the output of the plant. Among these are run of the mill material that is used for concrete aggregate, the various sized cuts and dust. At this date market research is being done on all of the products. One item for which only a small market exists at the present time is the dust produced as a by-products of the ore treatment.

Alaska's Independence Mine Revives

With considerable reorganization in management methods, the Alaska-Pacific Consolidated Mining Company is reopening its well known and valuable Independence mine at Wasilla, W. W. Stoll, new president and general manager, reports.

Since little mining was done during the past several years, the mine, unfortunately, fell into disrepair and about $100,000 had to be raised for rehabilitation. By August of this year nearly every building was repaired, all mill and power house units overhauled and engines rebuilt. Underground equipment and rotting timbers were replaced in the less remote tunnels and milling and mining began.

Through a system of split-check leases, 15 of 23 developed and semi-developed blocks have been let out, permitting full use of the 100-ton milling facilities. Foundations for an additional 50-ton mill, to be operating by summer, are being put in. William M. Stoll was made general superintendent, Walter C. Stoll is temporary mining consultant and Paul Horvath was put in charge of camp activities, offices and stores.

Within a year directors believe that the Independence will repay expenses and resume its position as one of the largest gold producers in Alaska.

Mexican Bill Will Force Mine Exploitation

Revision of Mexican mining laws to assure greater operating activity by demanding that mineral concessionaires perform more required work in a shorter time than now allowed features the bill that a Federal senatorial bloc, headed by Senator Meliton de la Mora of Colima, is preparing to present at this session of the national legislature which ends December 31.

Senator de la Mora in announcing preparation of this bill cited the case of huge iron deposits at Minatitlan, Colima, concession to which is held by Cia. Fundidora de Fierro y Acero de Monterrey, S.A., Monterrey, Nuevo Leon, Mexico's largest iron and steel works. The solon charged that the concessionaire has done nothing to work this deposit as it is apparently waiting for the exhaustion of the Cerro del Mercado, the great iron mountain near Durango City, Durango, that has been exploited for years and which is now servicing the iron and steel enterprise. That, said the Senator, is unfair to Mexico because putting the Minatitlan deposit to work would benefit Mexican mining and Mexican economy. There are several other such cases in Mexico, he said.

De la Mora estimates the Minatitlan deposit to be of 80,000,000 to 100,000,000 tons of high grade ore. He asserted that it is the largest and richest iron deposit found in Mexico in recent years. Gen. Jesus Gonzalez Lugo, Governor-elect of Colima, told President Miguel Aleman during the interview they had in Mexico, D.F., that promising iron deposits have been found near Villa de Alvarez, Colima. President Aleman ordered the National Commission for Stimulation of the Mining Industry to investigate.

E. McL. Tittman, manager, American Smelting and Refining Company, El Paso, and chairman, El Paso Metal Section, AIME, plays host to guests at the Welcoming Luncheon of the International Mining Days. Pictured are H. H. Bruhn, U. S. Potash Company, Carlsbad, New Mexico; Montgomery Drunzer of the firm of Drunzer & Casner, High Rolls, New Mexico; and Robert D. Gray, director, Industrial Relations and Professor of Economics, California Institute of Technology, Pasadena, California. Mr. Gray was guest speaker at the luncheon.

EL PASO'S INTERNATIONAL MINING DAYS DISCUSSES THE ATOM AND ENTERTAINS

El Paso's International Mining Days are famous wherever miners meet and the show put on by the famous old smelter camp from October 27-29 added to the fame of the celebration as it represented three days of fun and good-fellowship combined with three days of serious discussion and examination of current items affecting the mines of the nation. The hosts to the meeting were the El Paso Chamber of Commerce, the suppliers of the industry and the smelting and mining companies that headquarter in El Paso.

El Paso served alone as host to the International Mining Days this year because none of the regional mining conventions met at the same time and the program was changed somewhat from previous meetings.

Guest speaker for the banquet, held on the evening of October 27, was Jeff H. Williams, described variously as lawyer, philosopher and humorist, of Chickasha, Oklahoma, who added to his standing as a humorist at the affair sponsored by the El Paso Section of the American Institute of Mining and Metallurgical Engineers. All of the early guests were present at the banquet.

Registration of visiting delegates took place on October 28, followed by the Welcoming Luncheon. The afternoon session on this day was devoted to a discussion of "Public and Industrial Relations Affecting the Industry Today." The discussions growing out of this session were especially enlightening and reflected the thinking that human relations were perhaps the most important item in today's complex business and industrial relations.

Highlighting the fun at the Rancheros Breakfast at the International Mining Days was the choosing of "Mr. Big Waist" for the honor. Shown here are Homer C. Hirsch, general chairman, International Mining Days; Ernest W. Galbraith, Ingersoll-Rand Company representative from Phoenix, Arizona, the man under the gun in this instance, and the man on whom rests the responsibility of measuring the waists, Al Washburn, chairman, Rancheros group.

The second technical session was dedicated to "Atomic Energy and Its New Aspects." This paper, presented by Dr. Norris E. Bradbury, director, Los Alamos Scientific Laboratory, pointed up the advances in the development and use of atomic energy.

Like all International Mining Days, hi-jinx and good times were in the limelight. On the evening of October 28, the Suppliers Party was staged. Saturday morning, October 29, the annual Rancheros Breakfast was held. At this function, the regulation cowhand's morning meal of pancakes and bacon and eggs was enjoyed.

On the closing night the miners were entertained by a show staged by the local members of the clan—"Una Noche in la Mina"—which was outstanding for laughs and entertainment, a special show exclusively dedicated to the visiting delegates to International Mining Days.

As in past years, the ladies were shown an excellent time as two events were arranged especially for them. On October 28 a fashion show and coffee was given by one of the city's largest dry goods companies in its own tea room, and on Saturday afternoon, October 29, the A.I.M.E. Auxiliary entertained with a tea at Texas Western College's Cotton Memorial Building. Besides these functions, time and facilities permitted the miners and their wives to take many of the sight-seeing trips in and around El Paso and Old Mexico which lies just across the bridge spanning the Rio Grande.

To show the appreciation that El Paso has for the mining industry, the International Mining Days is held each year to bring the fraternity together for a few days of good fellowship, study and discussion. The original idea back of the function is to focus attention on the mining industry.

John D. Mitchell Tells of

LOST MINES AND BURIED TREASURES

FRENCHIE'S LOST GOLD LEDGE

The story of a long-lost gold ledge, said to have been worked by a mysterious old Frenchman, has been revived by a recent discovery in the northern foothills of the Estrella Mountains. The find was made in a dense growth of mesquite, just across the Gila River in Pinal County, 25 miles south of Phoenix, Arizona, and consisted of an old wagon, the bleached bones of two horses, metal fixtures, rotten bits of leather from a set of harness, and two tie ropes.

The Frenchman's name seems to have been lost somewhere in the mystic corridors of the past for he was known simply as "Frenchie" to the characters of the underworld where he spent all of his money and most of his time.

Frenchie was married to, or at least lived with, a Maricopa Indian squaw. Let us hope that she was beautiful. Neither could speak the English language. Frenchie was not familiar with the Indian dialect, and she knew no French. However, both spoke some Spanish for Frenchie had traveled and worked in Mexico and the squaw had been born and reared on the Pima-Maricopa Indian reservation in close proximity to the Mexicans and Spanish-Americans, so their limited conversations were carried on in that language.

The couple lived in a small shack on the banks of the Salt River when Phoenix was just a small, wild-and-woolly frontier town with more saloons, gambling houses and dance halls than residences. Frenchie had a team of Indian ponies and a small wagon and frequently gathered dry drift wood along the river bank for sale as stove wood to the residents of the little frontier town. The squaw did odd jobs, washed and ironed for the saloon keepers, tinhorn gamblers and dance-hall girls.

Frenchie was fond of but two things: red wine which he called Sangre de Cristo (Blood of Christ), and cigarettes made of tobacco rolled in silky corn shucks. He spent all of his money from the sale of wood for his beloved Sangre de Cristo and cigarettes, and often beat the squaw for her hard-earned money that they needed for food and clothing.

Since he had lost most of his teeth, Frenchie was forced to live on soups and soft foods. The squaw humored him and most of the time kept a pot of soup on the back of the stove so that he could have a bowl of warm soup when he staggered in late at night. One day, while doing an unusually large washing, she forgot all about the pot of ham hocks and cabbage she was cooking on the stove and let it burn to a crisp. Then, after she had washed her supper dishes, she filled the pot with soapy suds and left it on the stove to soak.

Later on Frenchie staggered in, soused to the gills in his beloved Sangre de Cristo. His first act was to dip a quart cup into the pot and then gulp down about half the contents before he discovered that something was wrong. As soon as he was able to get his breath, he yelled at the squaw and asked why she had not put salt in the soup. When told that he was drinking dishwater, he flew into a rage, dragged the squaw out of bed and beat her almost to death, took all the money in the house and left.

He returned two or three days later to find the squaw still in bed suffering from the severe beating that he had given her. As he warmed himself by the stove, a change came over the old man and he told the squaw that he was sorry for what he had done. The poor old squaw, thinking that there might be a chance of reforming him, told him that if he would promise to stop beating her for her hard-earned money she would show him a rich gold ledge from which he could obtain all the money he would ever need for his gambling and drinking, but if her people ever caught him in the vicinity of the gold ledge they would kill him on sight.

Old Frenchie gave his word of honor and a few days later, when the squaw had recovered sufficiently they set out in the wagon drawn by the two Indian ponies. They headed south and shortly after sundown they reached a point in the northern foothills of the Estrellas, where the horses and wagon were secreted in a dense growth of mesquite. The squaw took the lead and started to climb the long ridge that juts out from the main range about five miles north of Montezuma's Head and two miles northeast of Butterfly Peak, a short distance to the northwest of the junction of the Santa Cruz and Gila rivers.

After climbing for about two hours, with frequent stops to rest, they reached the crest of the long dark ridge and again sat down to rest. The squaw told Frenchie that the ledge was near and for him to "buscala" (look for it). Frenchie hurried up the ridge, but soon returned empty handed and started to abuse the squaw, accusing her of lying to him. The squaw stood up and with palm of the hand downward to indicate nearness, told him that there was a deep superstition among the Indians that prevented them from showing a treasure or lost mine to anyone outside of their immediate tribe, but for him to look again. Frenchie hurried away and in about half an hour returned with a small sack full of quartz that he had broken from a stringer that outcropped near the crest of the ridge. They quickly returned to their wagon and drove back to Phoenix, arriving just before daylight.

After he had cared for the horses, and while the squaw was getting breakfast, Frenchie took the sack of ore out in the yard and poured it on the ground. When the sun came up over the Superstition Mountains, far to the east, the old man picked up a large piece of the grey quartz, then let out a warwhoop that brought the squaw hurrying to his side. The rock was literally matted together with wires and masses of bright yellow gold that glittered and sparkled in the early sunlight. Unable to believe his own eyes, the old man stood there for a long time reveling in the dreams of a Monte Cristo. Was he not rich?

Frenchie lost no time in hammering the rich quartz in an iron mortar to free the gold from the rock. It took several weeks of riotous living to deplete the buckskin sack of nuggets that he obtained from the first trip. Eventually, though, he was broke and needed more money for his cigarettes and Sangre de Cristo. For the next trip to the hills, he mounted one of the ponies and took along food and a goodly supply of the red wine which in the end proved his undoing.

Old Frenchie again returned to Phoenix before daylight and very shortly was making the rounds of the saloons, gambling houses and dance halls. He made friends quickly, and most of them tried to learn the secret of his sudden wealth by getting him drunk. On these sprees he talked loud and long of his rich gold mine, but was always careful to drop not the slightest hint of its location. As time passed, the list of his friends grew longer and longer, and he was forced to make the trips more frequently and to devise all kinds of schemes so he could slip away from those who were determined to follow him to the bonanza.

One of his schemes was to invite all these friends to go on a drinking spree just before he was to leave for the Estrellas for a new supply of gold

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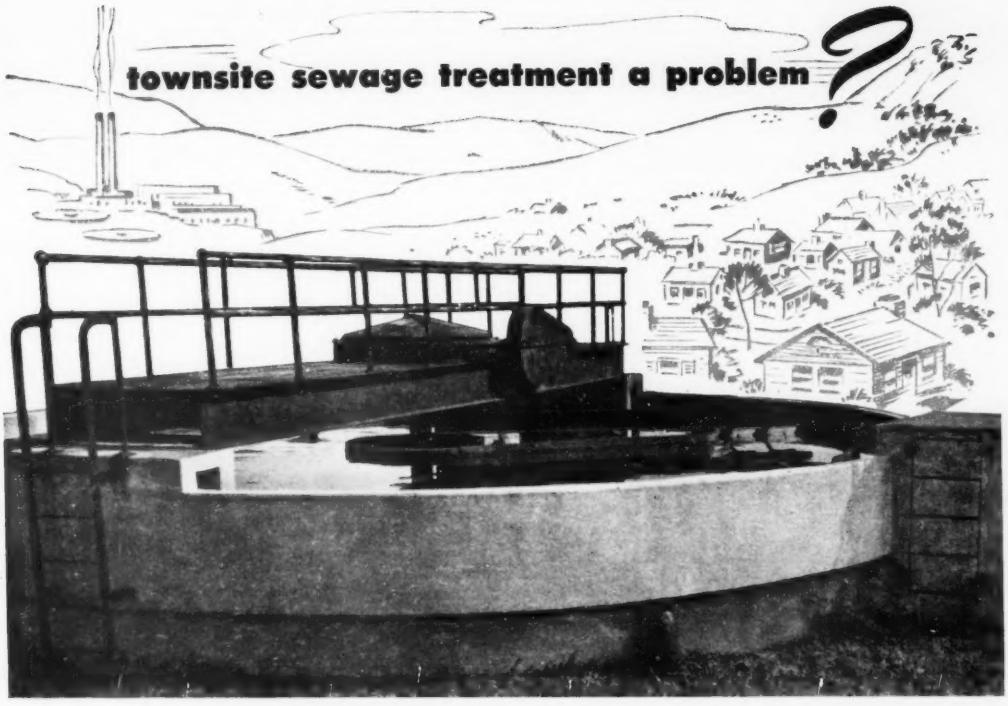

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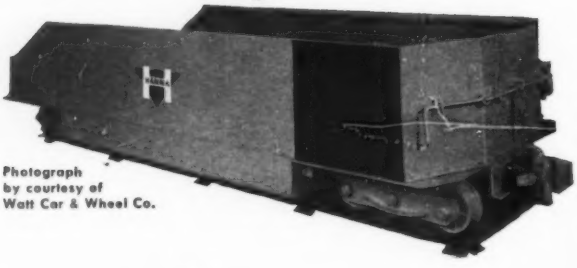

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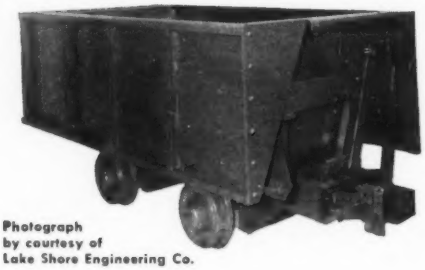

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I am receiving your publication regularly and would like to get it also in the future.

Your correspondent in Turkey is Falih Ergunalp, I think. He is a young engineer and a good choice for this kind of news service.

I am under the impression that the ultimate purpose of WORLD MINING is to bring news about mining to mining men in responsible positions and at the same time to present them with ads on mining equipment. I suppose this is a very efficient way to bring ads to where they will do the best work to the advertiser.

You achieve this by putting great emphasis on short news of the industry and especially on personal news. This was quite a novelty when you started your magazine, but I am afraid the novelty is wearing off. Some news may be interesting to some people, in that case they are so condensed as to be of no great practical value. Or one peruses news from his own country, out of sheer curiosity I presume, but in that case he already knows more about it any way. As to the personal news, I am not sure that they represent any great interest as such, although I must admit that some people like their names in print, in which case they are no news at all. Also some news you print on persons which you design as prominent, have rather futuristic tendencies, since they relate to young men who only recently left college but who, I am quite certain, will reach prominence in future years.

On the other hand it was with real pleasure that I saw a new tendency in your publication: You seem to have started full length monographic studies and articles. Your excellent article on Almaden (which is not yet concluded) will certainly be kept in my files.

My very humble suggestion is that you give more space to news of the industry but in a less condensed form, that you print more full length monographs and articles on mines, smelters, mills and on technological processes, and finally that you give less space to personal news.

Sehap E. Birgi
Izmir Caddesi 10
Yenisehir, Ankara
Turkey

Tin in Siam

Dear Sir:

The company with which I am associated is carrying on tin dredging in Siam, and I am interested in another company also operating in Siam. Recently a copy of your publication WORLD MINING for the month of May came before my notice and was found of great interest to myself and my directors.

I am taking the liberty of enquiring if you would place our company on your mailing list.

W. H. Lack, secretary
Takuapa Valley Tin Dredging
B.N.L. Chambers
George & Wynyard Streets
Sydney, Australia

Foreign Equipment Manufacturer

Dear Sir:

As a supplier to the German mining industry, I follow with considerable interest the articles in your paper and at this time I am not getting WORLD MINING regularly. I have heard recently, from friends in the industry, that you are prepared to send the magazine free of charge to interested parties.

I would be very happy if you would put my name on the list to receive WORLD MINING under these conditions and I thank you for all the trouble it may cause you.

As our company manufactures equipment for the mining industry, I hope that you will be able to grant the above request.

Carl Eduard Holweg,
mining director
Erzbergbau Salzgitte
Gevelsberg
Vogelsang i Westf.
Germany

Small but Interesting

Dear Sir:

I have been reading WORLD MINING for some time with great interest, and I believe that you present an excellent overall picture of mining activities in the world.

So far, however, I have not seen any items on mining in the Netherlands as regards coal, oil or salt. Naturally, the Dutch mining industry is comparatively small, yet it represents to my mind many interesting aspects, which account for its international reputation.

A.G.M. van Aernsbergen
Molenberglaan 32
Heerlen
The Netherlands

WORLD MINING cannot devote space to the arts of coal mining and petroleum recovery as it considers itself a medium to disseminate news and information relative to the metal mining industry only or to the branch that treats of the mining of industrial minerals that can be mined and beneficiated by conventional metal mining methods.—Ed.

Miner's Aid

Dear Sir:

I am receiving WORLD MINING regularly and I wish to continue to receive the publication, if possible.

My opinion about your publication is the best as it helps to a great extent mining people the world over.

Armando Santon de Oliveira,
engineer
St. John del Rei Mining Company
Nova Lima
Minas Gerais, Brazil

Tin and Ethnology

Dear Sir:

I wish to continue to receive WORLD MINING as I think it is a very interesting publication.

I read with much interest the article "Tin, a World Anxiety" in your May issue of WORLD MINING. I would like to point out, however, that there is a minor discrepancy in the percentages of the different races in Malaya (including Singapore) given by the writer. He has given the Malay population a lower figure and that of the Chinese a slightly higher one. The following are the latest percentages: Malays, 40 percent; Chinese, 41.5 percent; Indians, 10 percent; and the rest consists of the various European races and Americans.

The box story by Mr. Norman Cleaveland, general manager, Pacific Tin Consolidated Corporation, which accompanies the article is also very interesting and accurate. Incidentally, Mr. Cleaveland is known personally to me and we have had several talks together and I think he is a good authority on the tin position in the Federation of Malaya.

Chong Khoon Lin,
miner and planter
15 Yew Road, Puda
Kuala Lumpur, Malaya

Dear Sir:

We appreciate your kindness in sending us every issue of the WORLD MINING. We own and operate the Ashio copper mine, the largest of its kind in Japan, and several other mines and collieries so that we are one of the leading mining concerns of this country.

It is generally expected that some step will be taken in the not too distant future whereby we may be allowed to purchase dollar exchange. It is our desire and intention to buy a subscription as soon as it becomes possible. May we not, therefore, continue to be favored with the gift copies of WOLRD MINING until such time comes?

We hope that the time soon comes so that we may be allowed to remit U. S. funds to you so that we can buy American books and your publication.

T. Sugimoto, chief,
Research Division
Furukawa Mining Company, Ltd.
8 Marunouchi 2-chome
Chiyodo-ku
Tokyo, Japan

Dear Sir:

It is a great present to me to receive regular publications of WORLD MINING, which you send to me through the Liu Ho Kou Iron Works, Ltd. I wish most heartily to thank you for the valuable information one can get nowhere else. Please continue to send me future publications to my new address, as I am now metallurgist for Pioneer Enterprises, Ltd., Hongkong.

Again thanking you and congratulating you for the success of WORLD MINING in the mining world.

Michael S. K. Leung,
metallurgist
Pioneer Enterprises, Ltd.
Hongkong

Large Field Covered

Dear Sir:

I greatly appreciate receiving your monthly publication WORLD MINING. I would also like to congratulate you on a very excellent publication covering such a large field as mining the world over.

J. Coolbaugh, consulting metallurgist
P. O. Box 316
Bulawayo, Southern Rhodesia

8 Why
Model
HD-10
86.63 drawbar hp.
Six speeds forward, to 6.03 m.p.h.; two reverse, to 4.15. Weight: 62" tread, 21,000 lbs.; 74" tread, 21,600 lbs. Available with large idler.

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3 **INTERCHANGEABLE ENGINE PARTS** Nearly all of the GM engine wearing parts are interchangeable with each of the GM engines on the various models of A-C tractors and motor graders—no matter the size. Lowers parts investment, simplifies maintenance for Allis-Chalmers fleet owners.

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they're so popular

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Four speeds forward, to 5.00 m.p.h.; reverse to 1.89. Weight: 52" tread, 13,830 lbs.; 63" tread, 14,000 lbs.
Available with large idler.

5 **FAST MANEUVERING** 2-cycle diesel tractors are well known for their fast-working ability — not only for quickly traveling from cut to fill, but for turning around instantly in their tracks . . . and for easy maneuvering in and around tight places — especially important on bulldozing. Time saved is money made!

6 **PROPER BALANCE** Weight, speed and power are positively balanced in A-C tractors, assuring top performance on every job — pulling, pushing, lifting.

7 **OPERATOR COMFORT** All these advantages mean operator satisfaction, too — resulting in more work done more easily. Besides — he has a big, wide, comfortable seat, cushioned back, arm rests, roomy platform, convenient controls, good vision.

8 **MATCHED ALLIED EQUIPMENT** Each Allied manufacturer, skilled in his own field, works in complete cooperation with Allis-Chalmers in designing and building auxiliary equipment.

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Z-6 POTASSIUM PENTASOL AMYL

Z-8 POTASSIUM SEC. BUTYL

Z-9 POTASSIUM ISOPROPYL

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PIONEER PRODUCERS OF XANTHATES FOR METALLURGICAL USE

WORLD MINING

The International Department of MINING WORLD

SAN FRANCISCO, CALIFORNIA DECEMBER, 1949

INTERNATIONAL PANORAMA

WASHINGTON, D. C.—Hinting that tin supply will be sufficient to mark the end of world allocations, the Combined Tin Committee undoubtedly will be dissolved at the year's end.

LONDON—Latest estimates of world tin production indicate 190,000 tons of metal in 1950 and consumption at 158,000 tons. Thus, a surplus of 32,000 tons is indicated, an overproduction of approximately 20 percent.

THE HAGUE—Late October announcement of the sale of 15,000 carats of industrial diamonds to the U. S. is the latest of the series of purchases by the ECA for forwarding to stockpiles in the U. S.

WASHINGTON, D. C.—Planning to spend another $300,000,000 for development of power and other facilities, the Atomic Energy Commission announced that at least $50,000,000 would be earmarked for the Tennessee Valley Authority for future power requirements.

ALASKA—The announcement of a placer gold strike in the Flats of the Yukon in late October started a stampede to the area. Within a week a tent city had sprung up and miles of ground has been staked up and down the river. The outcome of the discovery is still in doubt.

ALABAMA—The Reynolds Metals Company has begun a major expansion program that will mean spending $8,000,000. To be completed by January 1, 1950, the added facilities will include new Lewis foil mills, General Electric annealing ovens and a number of other modern high-speed fabricating units. Site of the plant expansion is Listerhill.

LONDON—The tin market of the London Metal Exchange opened on November 15 and thus becomes the first of the great international commodity markets to reopen since the war.

JAPAN—With the recommendation of the Mining Bureau, the Japan Mining Industry Association and the gold producers of the country are actively planning reopening of the country's gold mines, shut down since the gold mine closing order of 1942.

ITALY—A gold deposit described as important has been discovered near Trento in northern Italy with a thickness of one meter and traceable on the surface for approximately 30 kilometers. It is reported that the average value of the ore is 12 grams of gold per ton. Operation of the deposit will be taken over by the Italian government.

WASHINGTON—A program to include 65 different construction projects will cost an estimated $230,000,000 at the Hanford atomic works. General Electric is prime contractor to the Atomic Energy Commission for the operation of the plutonium producing Hanford works and the town of Richland.

NEW GUINEA—Considering the high returns now being obtained by companies mining gold in New Guinea, the government of the Commonwealth of Australia is considering the imposition of a higher rate of taxes.

AUSTRALIA—At £A 450,000 the value of mineral production of the Northern Territory rose by 50 percent for the fiscal year 1948-49. Gold accounted for over half the value, but copper jumped by more than 20 times to £A 92,000.

WASHINGTON—To start initial operation soon, the new $2,000,000 plant of The Carborundum Company has been completed. Fifteen furnaces are to be employed and silica sand will come from the Spokane area.

BIZONIA—Production of potash salts is expected to reach 6,530,000 tons of crude potash in 1949, equivalent to 780,000 tons K_2O, an all-time record. Ten mines are contributing to the output of the British and American zones.

BRAZIL—At Sao Paulo del Rey, State of Minas Gerais, a deposit of djalmaite is reported that has a length of approximately four miles and varies from 20 to 50 meters wide. The mineral contains, on the average, 5 percent uranium and 75 percent tantalum.

CHINA—Preliminary examination of the silver-lead deposit of Wuchiasan, Hsing-Kiang Province, indicates tonnages of ore in excess of 6,000,000. The Bureau of Metal Mines of the province has organized a working party to explore the showing further.

WASHINGTON, D. C.—In early November the U. S. government put a rigid embargo on shipments of strategic goods that was world-wide to prevent reshipment to Russia and the Soviet controlled bloc. Especially noteworthy among the items now controlled are copper and bronze products, certain iron and steel mill products, crude asbestos and fibers, mica products, electrical apparatus and supplies, metal working machine tools, oil field and refining equipment and mining and metallurgical machinery.

PERU—New incentive has been given to the Peruvian mining industry by the decree established a few months ago. As was expected, this decree, which permits active mining companies to keep all of their dollars for metals, ores and concentrates, has strengthened the industry in the Republic.

ONTARIO—Johns-Manville Corporation's asbestos property near Matheson, where the company is spending $3,000,000 on initial work, is expected to be in operation by May 1, 1950. Construction of plants and necessary buildings proceeds apace and since March of this year over 45,000′ of drilling has been done on the orebody.

South African Labor Demands Wage Increase

Immediately the higher gold price resulting from devaluation was announced, the Rand mining unions began pressing claims for a 30 percent wage increase, higher holiday bonuses, a pension fund and other improved conditions. At a meeting between the Mining Unions' Joint Committee and the Gold Producers Committee of the Transvaal Chamber of Mines (representing the employees) in early October, a wage increase of 12½ percent, a pension scheme, an increase in the holiday allowance from £4-3-4 to £6-17-6 per week of holiday, and some less important benefits, were offered.

The mining unions rejected the 12½ percent increase offer, and countered with a demand for a 33⅓ percent wage rise, increased holiday bonus was also rejected and an amount of £8-2-6 per week demanded, while the remaining offers were accepted under certain conditions. A few days later the employees withdrew their original offers, and in their place proposed a 15 percent wage increase, a pension fund, a lump sum cash bonus of £25 payable immediately to all daily paid employees, other indirect cash grants (the two latter proposals to cost the gold mines an estimated £2,000,000 annually), a £6-17-6 per week holiday bonus, and other improvements. A second set of offers was accepted by the mining union, but it is expected that a demand for a further 15 percent wage increase will not be long delayed.

E. R. van Rensburg, general secretary of the Mineworkers' Union, said that none of the mine unions represented in the Mining Unions' Joint Committee was satisfied with the proposed 15 percent wage rise, but since the offer made by the Gold Producers Committee had not contained any clause making it binding for a specific period, the unions accepted the offer in order to secure the immediate cash grants. "The door is still open for further negotiations," he added.

Spanish Potash Reserves Of Cataluna Extensive

The geological basin containing the potash deposits of Cataluna is of great richness. Reserves are estimated at 500,000,000 tons of potash in carnalite and silvinite of which it is

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Eastern Manager . . K. WEGKAMP

Regular correspondents in the following cities and mining centers:

Santiago, Antwerp, Stockholm, Cyprus, Tientsin, San Jose (Costa Rica), Baguio (Philippines), London, Tokyo, Frankfurt, Medellin (Colombia), Strangways (Victoria, Australia), Vancouver, Paris, Bangkok, Mexico City, Helsinki, Tananarive (Madagascar), Redruth (Cornwall), Oslo, Benares (India), Dersley (Transvaal, South Africa), Budapest, Singapore, Buenos Aires, Lisbon, Madrid, Ankara, Lima, Rome, Sao Paulo.

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possible to consider one-third silvinite. This tonnage was calculated by taking into consideration the known extensions of the deposits.

Prior consideration had indicated the probable existence of 1,800,000,000 tons of salts. Whatever of these tonnages is adopted, the importance of the basin wherein lie the potassium salts is indicated by world consumption which is about 2,000,000 tons of potash annually, of which 90 per cent is employed in fertilizers.

From 1925, when production began in the Spanish fields, until the present, 1,400,000 tons of potash has been won from approximately 8,000,000 tons of crude salts.

Pound Devaluation Has Repercussions in Chile

The devaluation of the pound has brought many problems to Chile's mining industry, especially to the nitrate production capacity of the country. Much Chilean nitrate is bought by countries in the sterling area, not only Great Britain and the British Commonwealth but also Egypt and several other countries. According to the new value of the pound, Chilean exporters will get about 120 pesos instead of 173 per pound sterling. The nitrate industry will have to raise prices for the sterling area and so become more vulnerable to the replacements of natural nitrate by synthetic nitrate. One of the steps suggested to counteract this loss would be the devaluation of the peso in the same relation to the pound. However, the Chilean government is reluctant to act in this line, because even if this measure will be favorable for exporters to the sterling area, it will damage seriously the interests of importers for the dollar area who would have to pay about 52 pesos per dollar instead of 43. No final measures have been proposed as yet, but official circles are giving the problem their full consideration.

Mine Production Rising For Philippine Islands

The production of the major mining companies of the Philippine Islands for the first nine months of 1949 exceeded by a wide margin their production for the entire year of 1948. The eight major mines produced ores with a value of P22,995,573 ($11,497,787.00) for the nine month period as compared with P21,024,507 ($10,512,254.00) for the full year 1948.

Production of the five leading gold producers did not quite equal this record, the nine months 1949 gold recovery being P13,632,333, compared with P14,250,126 for the entire year of 1948. The base metal mines, exclusive of manganese and iron producers, showed an increase in production close to 100 percent over the comparable period of 1948.

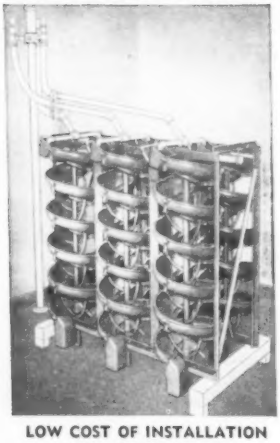
Despite this favorable production record, many Philippine gold mines have not yet returned to post-war production, and the current rate is still only about 20 percent of the prewar (1940) rate.

It is to be noted that all production figures are based upon $35.00 per ounce gold whereas gold has been selling in the open Philippine market throughout the year at prices ranging from $40 to $52 per ounce, an estimated average price being $47 per ounce. This has been of very great value to the Philippine mining industry in the rehabilitation of the most important industry practically 100 percent inactive during the Japanese occupation. For conversion into dollar valuation, P (pesos) 2 equals $1 U. S. Cy.

The following table shows the individual production records of major reporting gold and base metal mines of the Philippine Island:

	9 months 1949		*Entire year's total 1948*	
Gold	*Tonnage*	*Value*	*Tonnage*	*Value*
Atok-Big Wedge	110,242	P3,350,826	147,997	P4,633,215.40
Benguet Consolidated	421,896	5,829,821	391,132	3,633,928.08
Mindanao Mother Lode	71,400	2,302,470	68,700	3,370,799.00
Surigao Consolidated	71,220	1,685,427	69,473	1,385,962.00
Taysan Gold	17,681	463,789	7,584	326,242.00
	692,439	P13,632,333	884,886	P14,250,126.48
		Base Metals		
Consol. Mines (chromite)	164,340	3,276,050	230,099	4,410,781.00
Lepanto Consol. (copper-gold)	134,904	4,613,190	62,307	2,033,600.00
Acoje (chromite)	45,000	1,474,000	10,000	330,000.00
	344,244	P9,363,240	312,406	P6,774,381.00

HUMPHREYS SPIRAL CONCENTRATOR



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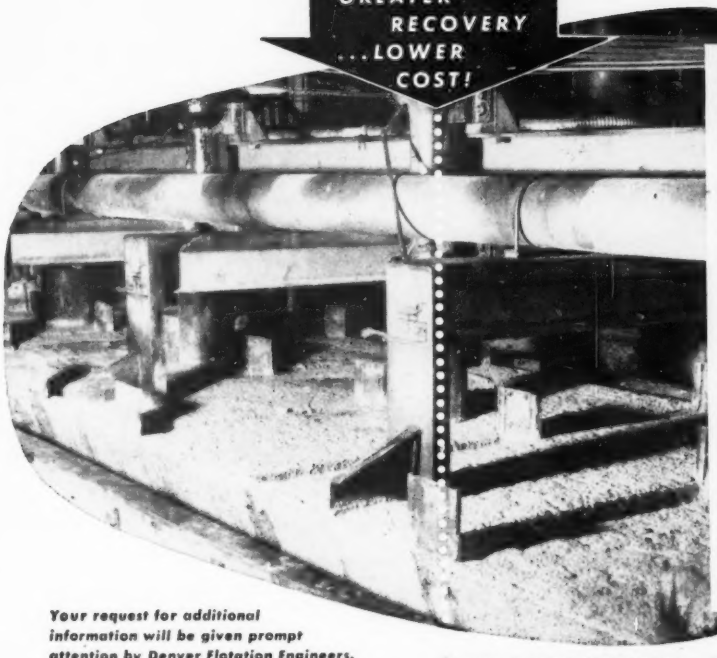

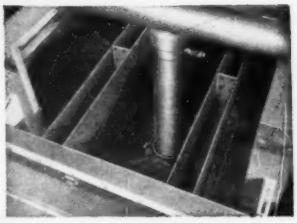

Minimum cell obstructions and maximum froth removing transverse launders are features of the New Denver Open Type "Sub-A" Flotation Machine.

Your request for additional information will be given prompt attention by Denver Flotation Engineers.

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Among the Advantages:

- **Lower tailings . . . higher recovery.**
- **Increased capacity for rougher and scavenger circuits.**
- **Lower Power requirements.**
- **Standard "Denver" wearing parts used throughout.**
- **Open type machine easily converted to cell-to-cell type if character of ore changes.**

Among the reasons for high tailing losses on certain ores is the fact that weakly attached mineral particles never reach the froth overflow level but instead, due partly to interruption in horizontal pulp travel, drop out and are lost in the tailings. Recovery is improved in the New Denver Open Type Flotation Machine due to two distinctive developments.

Unobstructed Horizontal Pulp Flow Gives Maximum Recovery

Elimination of cell partitions and other below-froth-level obstructions in the New Denver Machine permits more mineral particles to more quickly rise to the froth level. Dropping out of weakly attached middling particles is reduced to a minimum, resulting in maximum recovery and lower tailing.

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Patented *Transverse Launders* running from front to back of the New Denver Open Type "Sub-A" Flotation Machine reduces froth travel to one third and increases the length of overflow lip to four times that of a single overflow machine.

This more efficient froth removal means fewer mineral particles drop out to become tailing losses. Overall capacity and efficiency of the machine are improved, particularly in treating middlings and in coarse flotation.

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The Urquhart shaft and headframe at Mount Isa, Queensland, Australia, and part of the crushing plant. This organization, Mount Isa Mines, Ltd., is an example of participation by American capital.

MINING OPPORTUNITIES ABROAD

Summarizing what transpired at the United Nations conference, this paper points up the facts regarding U. S. participation in foreign mining

Charles Will Wright needs no introduction to the readers of MINING WORLD as he will be remembered as the author of a number of politico-economic articles dealing with the very important phase of the changing scene in the world of mines and minerals that is developed in the following article. Fresh from the United Nations Scientific Conference on the Conservation and Utilization of Resources, Mr. Wright prepared the paper on the m n "Saturnia" between New York and Gibraltar especially for presentation on these pages. In his absence from the United States he plans to visit Greece, Italy, France, Spain and England, and he promises to let the readers of WORLD MINING know more about his observations upon his return to this country.—Ed.

By Charles Will Wright

Consulting engineer on foreign mines
2540 Massachusetts Avenue
Washington, D. C.

It is a well known fact that foreign sources of mineral supply are becoming of vital importance to United States industrial progress. In as much, however, that the industries in Europe are also dependent upon such sources, the United States has been receiving but a small fraction of the anticipated tonnages of strategic minerals from the Marshall Plan or ECA countries and their overseas possessions. Imports of many essential minerals from the rest of the world also show a decided drop from pre-war years.

The principal reason for this deficiency is that most foreign mine owners do not have the dollars to purchase the machinery and equipment necessary for plant improvements and they hesitate, therefore, to spend their own capital on new plants and mine developments. Another reason is the uncertainty as to the future market for their products. They also question their governments' control of market prices, exchange rates, exports and tariffs, as well as the high taxes and the increasing demands of the labor unions. In fact, the mining companies and operators in Europe and elsewhere are just as much opposed to government controls and interference in their enterprises as we are in the United States. Thus, because of the socialistic tendencies of their governments, the private mining industries have preferred to do little until the future outlook is better established.

On the other hand, many of the foreign mine owners earnestly desire to cooperate with American private interests which can supply the dollars and technical aid they need. There are many worthwhile mines within the United Nations with potential ore reserves which could be developed into larger and more profitable producers if a satisfactory arrangement could be made between the mine owners, the local governments and American mining interests.

United Nations Conference

At the United Nations Scientific Conference on the Conservation and Utilization of Resources held at Lake Success (August 17 to September 6), minerals played an important part. The tasks of the conference were limited primarily to the exchange of ideas on the technique of conservation and utilization of resources. A number of interesting papers were presented by foreign and United States delegates on mineral supplies, increasing mineral resources by discovery, conservation in mining and milling and the outlook for future discovery. The general opinion was that the world resources of mineral commodities are for all nations providing means of distribution between nations could be made more efficient.

No attempt was made at the Congress to discuss government policies, although mineral resources and their economic ramifications are intimately related and little can be done until the present international barriers are modified so that one country is free to supply what another country lacks in minerals and in technical knowledge on methods of production.

Most of the foreign delegates were government representatives and in their papers they naturally told about what their governments had done in the discovery and development of their mineral resources and of their future plans. As to what private enterprise had done and should do to build up mineral production, this was clearly brought out by Donald McLaughlin in his paper on Conserva-

Refinery of the Rhodesia Copper Refineries, Ltd., is controlled by the Anglo-American group and refines copper from Nchanga and Rhokana. As the name of the holding company signifies, American capital plays a part.

tion of Mineral Resources, and by Secretary Krug, Department of Interior, and our Bureau of Mines delegates.

The conference was an outstanding accomplishment of the Department of State in bringing together several hundred delegates and experts from approximately fifty nations, not only to have them exchange their views on ways and means to conserve and utilize the world's resources but to get acquainted with one another in the luxurious bar at Lake Success.

Safeguarding American Investor

Secretary Acheson in an address before the Pan-American Society, which was published in the New York *Times* on September 20, stated as follows:

"In providing assistance for economic development, it would be contrary to our traditions to place our Government's public funds in direct and wasteful competition with private funds. Therefore, it will be our policy, in general, not to extend loans of public funds for projects for which private capital is available. It is our purpose, also, to emphasize the desirability of loans which increase productivity.

"We have had these principles in mind in elaborating the Point Four Program. Because we believe that the job ahead should be done primarily through private initiative, we have requested Congress to authorize the Export-Import Bank to offer certain guarantees against risk peculiar to foreign private investment.

"We hope that the flow of private capital can be stimulated also by the negotiation of treaties to increase private investment abroad. We are concerned with two types of treaties: first, treaties to avoid double taxation; second, treaties to define our economic relations and give reasonable assurance to our investors while safeguarding the interests and integrity of other nations."

Herbert Gaston, chairman of the Export-Import Bank, recently outlined his plan for guarantee of private American investments abroad if Congress grants it the power, namely:

1. The convertibility of earnings from such investment in a foreign country into dollars and the transfer of dollars to the United States.
2. The guarantee against confiscation or seizure without prompt and adequate compensation.
3. Against physical destruction of property as an incident of war, and that
4. Capital investment to be eligible for guarantee whether it be in the form of cash, equipment, or other facilities, specialized services, or any other outlay of value.

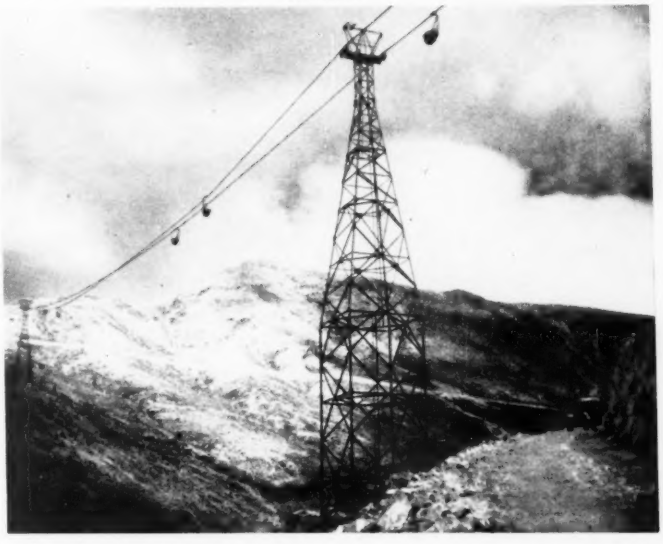
If passed, this plan doubtless will reduce greatly the present hesitancy on the part of American capital to venture abroad.

Testifying on August 19 before the House Banking and Currency Committee on behalf of proposed legislation to stimulate the investment of American private capital in underdeveloped areas of the world, Under-Secretary Webb stated as follows:

"Private capital in this country is potentially the greatest external source of investment funds for development abroad. Furthermore, a private investment carries with it the technical skills, managerial experience, organizational talents and incentive which are essential to put capital to effective use. Our industrial technology is largely in the hands of private organizations and can best be put to work through private channels.

"We feel it is particularly important to secure a basic understanding with countries needing foreign investment as to the treatment which will be accorded to foreign capital by those countries. To this end we are engaged actively in the negotiation of bilateral treaties with foreign governments. These treaties provide that the property of investors will not be expropriated without prompt, adequate, and effective compensation, that investors will be given reasonable opportunity to remit their earnings and withdraw their capital, that they will have reasonable freedom to manage, operate, and control

Cerro de Pasco Copper Corporation operates mines in Peru and this picture illustrates the recently completed installation, done with American capital, of the vital 100-mile tramway system at Yauricocha.



An estimated $130,000,000 of new American capital is to be expended in the conversion of the Chile Exploration Company's Chuquicamata plant from treatment of oxide to sulphide ore. This scene shows one of the world's largest open pit operations at Chuquicamata, Chile.

their enterprises, that they will enjoy security in the protection of their persons and property and nondiscriminatory treatment in the conduct of their business affairs.

"Treaties alone, however, cannot give an investor the assurances which he may require legitimately in order to risk his capital abroad. With the best faith in the world a foreign government cannot guarantee that it will have sufficient dollars actually available to permit investors to remit their profits. It cannot guarantee that dollars will be available to pay promptly for property should it become necessary in the public interest for it to be expropriated. It cannot guarantee against the possibility of confiscation or destruction in the event of internal disturbances or war. We believe, therefore, that guaranties by the United States Government against certain risks peculiar to investment in foreign countries will have an important effect on the decisions of potential investors to send their money abroad. The bill which you are now considering authorizes the Export-Import Bank to make such guaranties. This legislation is a part of a program which involves cooperative action on our part and on the part of other countries for our mutual advantage. I urge you to give it your approval."

Political Aspects

Certain foreign governments do not look favorably upon the participation of American capital and "know how" in the exploitation of their mineral resources, particularly in their colonies. Many of them have laws which prevent a foreign company from acquiring a controlling interest in such exploitation. However, if a mining project is a good risk and the American investor is guaranteed by the local government against confiscation and double taxation and, further, is assured that his profits are payable to him in dollars and if he has confidence in his associates, a controlling interest is not essential providing, of course, that he has checked up on the "ifs.". In fact, his investment is even more secure than were he to control a majority of the shares in the enterprise, as he will have the protection of his associates against discriminatory governmental action and adverse political propaganda.

The first essential in considering a large investment abroad, however, is to get the local government to enter a binding contract giving the necessary guarantees for the specific investment. This contract with the endorsement of the Export - Import Bank will greatly reduce the risk and give the American willingness to participate in mining ventures abroad.

Background Information

There is much background information available on the mineral resources and industries in many countries of the world in the Foreign Mineral Surveys published just before the war by the U. S. Bureau of Mines. These include reports on most of the European and Latin American countries. Most of these were prepared by the writer in cooperation with the officials of the local Mining Bureaus and mine operators and with the Foreign Service Officers of the Department of State. A number of these were brought up to date and republished during the war years, and others added on Australia, Japan and China. Additional information on mine developments throughout the world is also being received by the Foreign Minerals Division of the Bureau of Mines through the Foreign Service Officers of the Department of State.

ECA Loans vs. Private Enterprise

During the past two years many requests for financial aid have been presented to the ECA for mining and metallurgical projects backed by the local governments, and some of these have been granted. Also a number of mine operators have asked for loans based on scant and unreliable reports. In general, the local mine owners and engineers lack the experience and knowledge of modern production methods and machinery to make a comprehensive report on a mining project from which an analysis can be made of the financial and political risks involved. Nor does the ECA have the necessary staff in the field to make a thorough examination of the properties for which loans are requested.

As the ECA loans must be made through the local governments, many of the private mine owners in these countries are hesitant to ask for such aid, as the loans, if granted, would give their government a lien on their property and a control of their operations. They prefer to carry on as a private enterprise and would welcome the opportunity to have private American capital participate in their undertakings.

The ECA has several mining engineers in the field and the State Department has several Mineral Attaches who are doing what they can to get the local mine owners in touch with American mining companies. These companies, however, before considering capital investment, must send their own engineers or employ a competent consulting firm to make a final examination of the property and the financial analysis of probable profits and the risks to be taken in case the investment is made.

Conclusions

The opportunities for investment in mining and development projects abroad are numerous, but they require careful selection by competent local and American mining engineers. In recent years our mining companies and investment firms have shown little interest in risking capital in many of the foreign countries because of past experience. However, as our country is confronted now with the urgent need of many of the mineral products from foreign sources, let us hope that private American capital, when given the necessary governmental guaranties, will have the acumen to participate financially and technically with the mine owners abroad to their mutual advantage and to that of the United Nations. Our dependency upon mineral imports is clearly presented by the writer in "An Accounting of World Mining for 1949," published in the MINING WORLD in March, 1949, and in "Metals of the Future," published in *Engineering and Mining Journal* in May, 1949. Copies of both of these articles were sent to officials of the State Department and to members of Congress for serious consideration.

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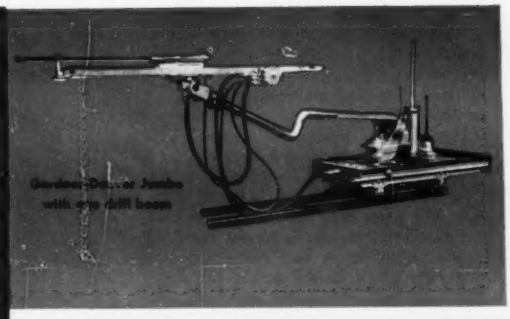
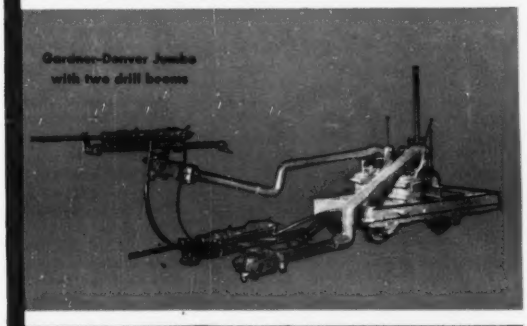
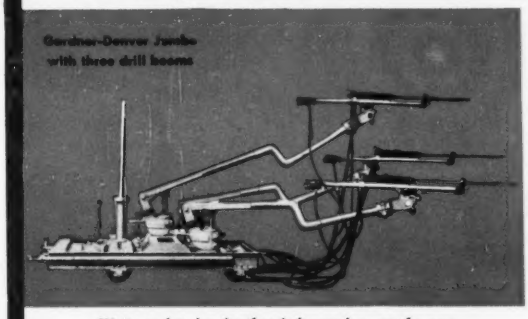


Gardner-Denver Jumbo with one drill boom



Gardner-Denver Jumbo with two drill booms



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John M. White tells how

LEPANTO CAME BACK

This famous centuries-old copper-gold mine in the Philippine Islands had been successfully developed into a dividend-paying enterprise before World War II. Under orders from the U. S. Army, the Lepanto installations were destroyed to prevent the invading Japanese from operating the mine. The Japanese put the property back on a production basis only to have the installation bombed to the ground when the Americans reinvaded the Islands. The plant was rebuilt for the third time in 1948, and with a most modern installation has resumed production on a sound basis. Mr. White tells the interesting story of Lepanto hereafter.—Ed.

Before Columbus discovered America, Lepanto was a mine. In those early days the properties which comprise what is now known as the Lepanto Consolidated Mining Company were worked by crude methods by the aborigines to obtain copper from the rich ores. The history of the mine even pre-dates the Ming Dynasty of China (1368). Proof of this fact lies in pottery of pre-Ming origin discovered in the mine's old workings.

Located about 250 miles north of Manila in the Mountain Province on the Island of Luzon, in the Philippines, Lepanto is in the heart of the country inhabited by the erstwhile head-hunting Igorots. It is not far from the world-famous terraced mountains at Bontoc.

John M. White, who is with Hopkins, Hagbach & Company, Los Angeles, Calif.

Turning the pages of history to 1574, the Lepanto district was "worked" in a highly profitable and unique manner by that notorious Chinese pirate, Li Ma Hong. In his day, this extraordinary character, who maintained his headquarters on Formosa, well-nigh controlled the coasts around the China Sea; in fact, he at one time occupied Manila itself. However, he found his nefarious business prospered best by allowing Chinese vessels loaded with their manufactured articles to proceed undisturbed to Manila. There the merchants traded their wares for copper mined from the Mankayan (Lepanto) district. Then, as the copper-ladened sailing ships departed for the return trip to China, Li Ma Hong and his pirates captured the valuable cargo.

Spanish and American Occupations

During the early centuries the Lepanto area was the source of materials for native-made copper utensils. Thus, when the Spaniards arrived in the early 16th century their attention was attracted to the extensive use of copper by the natives. "The mines to the north" was the answer to their queries as to the source of this metal. However, hostile natives kept the way to this district blockaded for many years. In the 1850's an expedition was organized under Hernandez and the Spanish by conquest gained control of the region. The Spaniards

Lepanto's new post-war mill that is handling 550 tons of ore per day at the present time. Construction was begun in May, 1947, and the plant turned over on June 26, 1948. This is a strictly modern installation throughout.

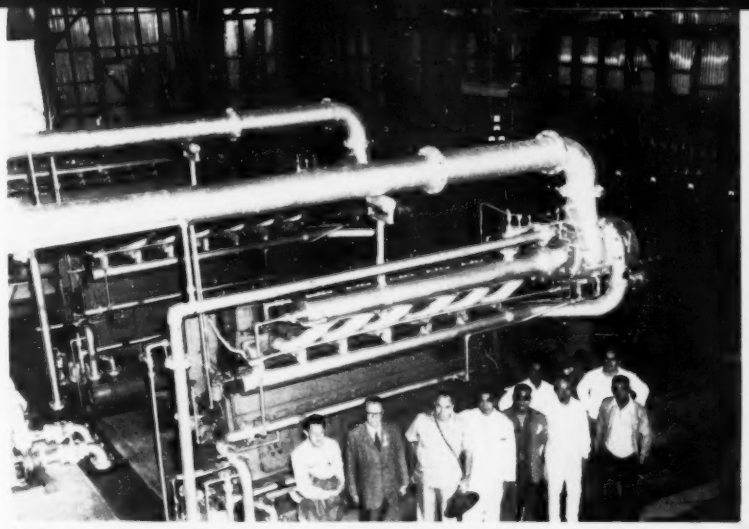
immediately proceeded to operate the mine by using the natives as leasers. The natives continued to extract the ore by their own methods, mainly the primitive fire method, and the Spaniards bought the output. Then the ore was hand crushed between large rocks, sorted, and finally it was melted in small furnaces using charcoal as fuel.

For some 40 years during the period of Spanish occupation of the Philippine Islands the Mankayan district continued to be operated under such primitive methods.

At the end of the 19th century the Spanish - American War broke out, the conclusion of which brought the Philippines under the jurisdiction of the United States. After peace many of the United States soldiers remained in the Islands to become soldiers of fortune. American prospectors settled the Lepanto area. A mining - claim boom ensued with claims staked out and located for miles around. Due to lack of transportation facilities no operations on a commercial scale were attempted. The area continued to be prospected by individual fortune hunters for some years.

American Miners Arrive

Then came 1933; a year to be remembered in the Philippines as it marked the beginning of its great mining boom aided by the increase in the world price of gold. In the intervening years before 1933 a good road known as the Mountain Trail had been built north from Baguio into the Lepanto district. Thus, improved access to the property, combined with the fact that the ores had a high gold content, made feasible a large scale operation for the district. A plan was devised whereby the various prospectors and claim-owners pooled their holdings. A corporation was formed, and on September 21, 1936, the Lepanto Consolidated Mining Company officially came into being. The first modern plant with a daily rated capacity for treatment of 400 tons of ore was erected. Grinding at this new plant was started in October, 1937. The production record for the initial 1937 operations was 23,416 tons with a gross value of P.105,552. The first full year of operations, 1938, brought returns approximating a half million dollars. By the end of 1939, in addition to making back the initial deficit, Lepanto rewarded its backers by paying its first dividend of ½ centavo per share. Dividends totaling 2¾c per share were paid subsequently during 1940-1941.



Interior view of the new Worthington power plant installations that furnishes electricity for development, mining, milling, and camp facilities.

For the four years of operation prior to the war, Lepanto production continued on a profitable basis, showing a year-to-year increase as indicated in Table No. 1.

The War Years

With the Japanese invasion of the Philippine Islands in December, 1941, operations at Lepanto were discontinued. In February, 1942, under orders of the U. S. Army, the Lepanto mill, machinery, equipment and all buildings were blown up and destroyed. Shortly thereafter the Lepanto area was overrun by the invading Japanese.

Knowing the value of the mine as a copper producer, the Japanese engineers immediately set about to put the property back on a production basis. In less than one year they had the mine producing at a rate estimated double its prewar capacity. A Japanese schedule indicated a capital expenditure of $4,736,000. Records left by the Japanese, and recovered at the liberation, showed that from January, 1943, to July, 1944, a total of 426,627 tons of ore was milled, yielding 10,800 tons of copper and 28,800 ounces of gold. Estimated value of copper ore produced during the Japanese occupation was $3,500,000.

With the return of the American Army to the Philippines in 1944, the U. S. Air Force bombed the new Japanese Lepanto plant. For the second time, through the ravages of war, Lepanto was leveled to the ground.

Postwar Rehabilitation Period

With the conclusion of the war came the great task of rehabilitating the property. At first it was thought that the financial problem might be met through reparations and shipment of copper concentrates left by the enemy. However, it soon became evident waiting for such finances would greatly delay the work of putting Lepanto back in production. The company was fortunately in a position to effect a credit arrangement with the Hongkong and Shanghai Banking Corporation whereby funds were provided as required for rebuilding and re-equipping the properties.

After nearly two years of indecision, reconstruction was started in April, 1947, on the new plant of most modern design with a milling capacity of 500 tons daily. With befitting ceremonies, this new mill representing the efforts of a little over one year's rehabilitation work — was placed in operation on June 26, 1948. In the interim, after several months' negotiation, the directors had secured a new contract with the American Smelting and Refining Company. Under this contract, which is more favorable than its prewar arrangement, Lepanto ships its concentrates to Tacoma, Washington. One feature of the contract allows the company to have its gold returned to Manila, thus enabling the company to benefit from the higher price obtainable for gold in the free Manila market. During the past year it is estimated that the average price for gold in Manila approximated $48 per ounce, as compared with the U. S. Mint price of $35 per ounce. As Lepanto ores carry an average of 0.12 ounces of gold per ton, this premium amounted to about $1.50 per ton. However, Lepanto is

Table No. 1

Year	Copper (Tons)	Gold (Oz.)	Silver (Oz.)	Value (in U.S. Cy.)
1938	2,493	2,229	60,820	$ 495,256
1939	4,171	5,148	83,576	998,187
1940	5,719	11,409	103,864	1,401,350
1941 (11 mos.)	5,048	16,538	87,102	1,509,980

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still primarily a copper mine — its ores carrying an average of 90 pounds copper to the ton.

In order to fortify its financial position and more quickly to liquidate its bank indebtedness, Lepanto increased its capitalization from 17,500,000 shares to 20,000,000 shares in October, 1948. Rights to buy the additional 2,500,000 shares were offered to stockholders at 50 centavos (U. S. $0.25), but had to be issued on a prorata basis, as they were oversubscribed.

While mill operations were resumed in June, 1948, the first shipload of concentrates left the Philippine Islands on October 27, 1948, followed by Nos. 2 and 3 shipments of December 6, 1948, and January 3, 1949. First payment from the smelters was received in January, 1949. In the meantime, reconstruction and operation of the property had required banking credits reaching to a high point of $1,506,759 on January 13, 1949. Subsequently, through smelter payments and new capital obtained through stock rights, the bank indebtedness declined to $250,000 by the end of May, 1949.

Later, as of July 1, 1949, the company had entirely eliminated its bank overdraft and showed a credit balance of $17,368.62. As of the same date, there were unliquidated shipments of concentrates, the value of which was approximately $531,650 (gold valued at $35 per ounce), against which the banks had made advance payments of $243,218.32 to be repaid out of the proceeds. In addition, delivery of the gold contents of previous shipments were estimated to yield $94,462.

War Damage Claims

On February 12, 1948, Lepanto filed a war damage claim totaling $3,052,637. This claim was the first mining claim processed by the Commission, with a final recommendation for approval of $2,455,789. On August 30, the company received—in accordance with the announced policy of the Commission — a 30 percent payment ($360,635) on account of "surface" installation damages. Further payments are contingent upon future appropriations by the U. S. Congress as well as a policy question in regard to the ore extracted by the Japanese.

Geology

In the opinion of many geologists, the deposits at Lepanto are definitely of the mesothermal type. (A deposit formed at intermediate temperatures by ascending thermal waters and in genetic connection with intrusive rocks.) The economic mineral enargite (Cu_3AsS_4) is found in a large tabular deposit resting on edge at an angle of approximately 72°, whose thickness is approximately 200', but whose length and width are as yet unknown. So far, the deposit has been proved to have a width, down the dip, of 400' and a strike length of about 5,000' before being intercepted by the hanging wall which has about a 5° rake to the right. Each additional 100' in vertical depth should add an additional 1,200' to the strike length before being truncated by the raking hanging wall.

The predominant mineral, enargite, occurs as a replacement and as a filling in the fault breccia.

Evidently, there have been at least three stages of mineralization in the Lepanto deposit.

The first was an almost complete replacement of the original country rock by quartz. Later on intrusion of granite, exposed about one kilometer away, on the footwall side, tilted the deposit nearer the surface. The quartz, being more brittle than the elastic country rock, was broken into a breccia which allowed solutions to percolate rather freely and deposit their copper sulfides. Where the solutions obtained their copper is as yet undetermined, but as the intruded granite is almost barren of copper-bearing minerals, it is supposed that they came from there.

After the deposition of the first copper, subsequent faulting again fractured the deposit at an angle of about 30° with that of the original deposit; and these cracks were again filled by enargite.

Some gold was deposited with the copper, but the best assays are to be found near the hanging wall where assays up to as high as 2 ounces per ton are not uncommon. It is reasonable to suppose that the grade of gold will increase in depth for some distance.

Deposits of this general type characterize several of the largest and best known copper properties of the world and extend from a few hundred to several thousand feet below the original surface of the earth. As Lepanto ore begins at about 3,000' below the limestone beds on Mt. Data, one is justified in assuming several hundred more feet of depth below the present workings as prospective ore in the deposit.

Ore Reserves

The heart of any mining enterprise lies in its ore reserves, both developed ore and that additional ore which might, from geological considerations, be expected to exist. In both of these respects Lepanto is well fortified. Ore reserves at the end of 1947 were calculated as 782,500 tons of positive ore and 607,000 tons of probable ore, making a total of 1,389,500 tons. The average content was estimated 4.2 percent copper and 0.115 oz. of gold to the ton.

At the 1948 year-end, notwithstanding the 47,900 tons extracted from June to December, development work had substantially increased reserves, these being estimated December 31, 1948, as

1,324,200 tons positive ore, and
308,600 tons probable ore.

Also, the average content of this ore showed somewhat higher values being calculated as 4.5 percent (or 90 pounds per ton) copper and 0.122 ounces of gold per ton.

While these gratifying ore reserves assure full-scale operation of the plant for nine years at 500 tons per day, the following statement of the Board of Directors is significant:

"With the knowledge of the mineralization of the Lepanto district, which has accumulated during the past century and more, it would do violence to realities to assume that

This picture, taken April 12, 1947, shows the Lepanto mill site when the rehabilitation started. The mill and other installations were razed to the concrete foundations.

Table No. 2
MILL RECORD—1948

Month	Ore Treated— Short Tons	Copper %	Gold Oz./T.	Concentrate Produced— Short Tons	Copper %	Gold Oz./T.	Recoveries— Copper %	Gold %
June (5 days)	474	3.51	0.054	51.6	24.72	0.317	76.9	63.5
July	4,490	3.39	0.062	594.9	23.67	0.334	92.5	75.4
August	4,020	4.33	0.070	581.5	27.10	0.307	90.6	75.5
September	6,844	4.97	0.104	940.2	33.34	0.574	92.1	76.0
October	8,092	5.87	0.163	1,205.5	36.67	0.853	93.0	78.6
November	10,450	4.82	0.190	1,378.6	33.84	1.097	92.6	76.0
December	11,775	4.63	0.211	1,529.7	32.67	1.136	91.3	69.7
TOTALS	46,145	4.79	0.152	6,281.9	32.35	0.830	92.0	74.2

at the end of nine years there would be no more ore."

Operations

On June 26, 1948, the Lepanto mill commenced production. The progress of milling operations during this period is set forth in Table No. 2.

During the initial six months' operating period, Lepanto milled 46,145 tons of ore valued at approximately one million dollars. The estimated smelter value per ton was $21.33. Total operating costs, including depreciation, but before taxes and depletion, was $13.73 per ton. These figures indicate approximately 35 percent of gross value of production was retained as operating profits. It should be noted, however, that operating costs during the inception of any mining ventures are high and not representative; likewise, recoveries of ore improve with metallurgical experience in treating the ores. As a matter of fact, operating costs currently approximate $10 per ton of ore treated.

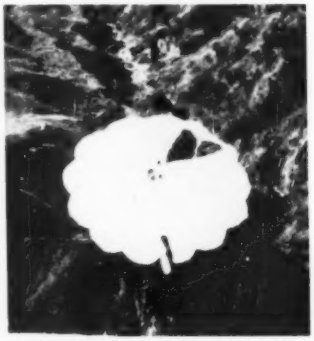
Since the first of 1949, mill operations have shown a further step-up as indicated by Table No. 3.

Estimated Earning Power

Based upon a ratio of 35 percent of gross income carried to net (this does not take into consideration current lower costs, but does make allowance for current lower copper prices), the present 500-ton daily milling operations should yield a net income approximating $1,200,000.

The ambitious Lepanto management is not content to sit back and be satisfied with these gratifying results. The whole reconstruction program was laid out with foresight, looking to an initial production of 500 tons daily, subsequently to be increased to 1,000 tons daily. This proposed plan to increase the mill capacity should more than double earning power.

With the current operations on a profitable basis, Lepanto's technical staff now recommends putting the expansion program into effect. At the company's annual meeting on April 13, 1949, it was announced that the plan to expand mill capacity to 1,000 tons daily had been initiated and bids for necessary equipment requested. Estimates indicate that the additional capital outlay to double capacity should be in the neighborhood of $900,000. This outlay can be spread over a 12 to 18 month period. Bank indebtedness had been eliminated as of end of June, 1949.



Photograph of a bomb being dropped by parachute on Lepanto during the American reoccupation of the Philippines. As in the previous occupation by the Japanese, the installations were leveled.

That early dividends may be expected by Lepanto shareholders is further confirmed by the president's statement at the annual meeting on April 13 that the Board is confident that earnings are sufficient to pay for the expansion as necessary.

Management

Much credit is due the Lepanto management in restoring the company to a profitable producing basis. Furthermore, the executives and directors are to be commended highly in that since liberation in 1945 and during the entire period of reconstruction they have worked without salary, except a nominal payment of $225 per month to the treasurer for clerical assistance and nominal directors' fees of $25 for attending meetings. This is still true as of July 1, 1949. The executives have agreed informally among themselves not to accept any salary or bonus until dividend payments are resumed. Mr. E. A. Perkins is president; V. E. Lednicky, vice-president; T. W. Farnell, treasurer. Other directors are Nicolas Orosa and M. R. Arick. Tomas Contreras is secretary. The operating staff includes C. B. Foster, general superintendent; George Murray, mine superintendent; H. H. Bein, mill superintendent, and Hans Dilli, master mechanic.

It appears noteworthy that prior to World War II, Lepanto had established itself as the outstanding copper-gold mine of the Far East. In fact, the American Bureau of Metal Statistics listed it as among the notable copper mines of the world. Even with copper selling at 10c-12c per pound and operating a smaller and less efficient plant on lower grade ores, Lepanto was a money maker prior to the war. Obviously, in spite of higher postwar costs, with ores averaging 90 pounds of copper plus $5.70 in gold to the ton, Lepanto is a remarkably high-grade mine. Furthermore, these values are not in narrow veins, but across widths varying from 50 to 120'.

The patience of Lepanto shareholders during the reconstruction and preliminary production periods should soon be rewarded in seeing their investment again bearing fruit. An initial postwar dividend appears imminent. Furthermore, Lepanto gives every promise of proving a long-lived profitable operation. Both profits and dividends should be greatly augmented with completion of their plans for a 1,000-ton capacity operation.

The company's sole capitalization comprises 20,000,000 shares, authorized and outstanding, par value 10 centavos.

Table No. 3

1949	Tons Treated	Estimated Value	With Gold at $35.00 Per Oz. and Copper at:
January	13,007	$266,750	$0.2343 lb.
February	14,087	258,500	0.2343 lb.
March	15,576	271,050	0.2343 lb.
April (21 days)	10,985	196,080	0.1993 lb.
May	16,025	251,350	0.1785 lb.
June	15,920	246,000	0.1600 lb.
July	16,668	282,100	0.1754 lb.
August	15,935	263,625	0.1755 lb.

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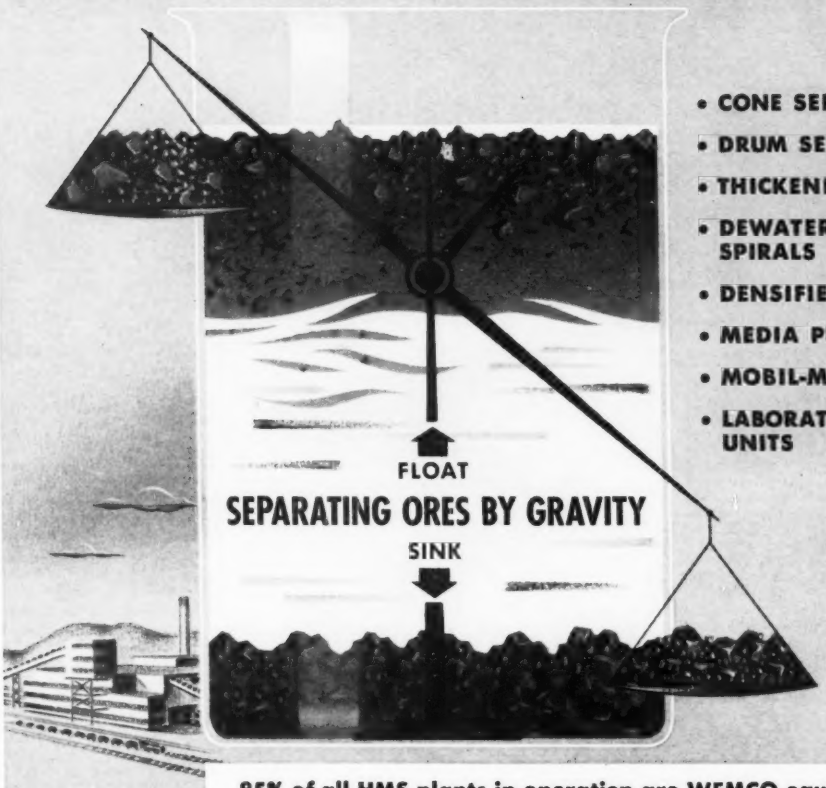

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Adil Gabay & Albert Koenka, Istanbul, Turkey

PROMINENT MEN IN INTERNATIONAL MINING

G. Haddon, chief mining inspector; *M. McKeown*, Australian Institute of Mining and Metallurgy; *F. E. Moloney*, Chamber of Mines; *Dr. D. Shiels*, Public Health Department, and *P. Murphy*, Australian Workers' Union, have been appointed by Victorian State Government as a committee to consider mine regulations.

L. Sinclair has resigned from Mount Isa Mines, Ltd., to return to New Caledonia to take charge of Etablessements Ballande's mining and engineering interests in New Caledonia and the New Hebrides.

CHARLES WILL WRIGHT, internationally-known mining engineer, sailed for Italy in October for an extended visit at various European cities including Rome, Athens, Madrid, Lisbon, Paris and London. Besides getting information on certain mine development projects, he will make a study of the present mining legislation, exchange controls, labor conditions, taxes and tariffs and the changes that are being considered to encourage better cooperation between local and foreign mining interests for increased output of strategic minerals under private enterprise.

Dr. Buller Murphy, chairman of directors of Tantalite, Ltd., South Australia, recently visited Wodgina. He is expected to visit the United States in connection with the formation of New Metals, Ltd.

Dr. Krishnan has been elected president of the Geological Mining and Metallurgical Society of India. *Professor N. N. Chatterji* and *N. L. Sharma* are joint secretaries.

J. C. Richards has joined the board of Gold and Base Metals, Nigeria.

A. L. Johannson has been appointed manager of Consolidated M. & S. of Canada, Ltd., with offices in Vancouver. He will be the company's official representative of the president.

Hamdi Bozbag, a graduate of Colorado School of Mines, has resigned from the M. T. A. Institute and is now employed by Canakcill Mining Company. The company is engaged in the exploration of the newly acquired chromite and lead properties in Turkey.

Pertex Bediz, a graduate of Colorado School of Mines and for several years geophysicist at M. T. A., has resigned to join the staff of the E.C.A. mission to Turkey. He is assistant to *C. O. Mittendorf*.

Toledo Piza, engineer of the Instituteo de Pesquisas Tecnologics, Sao Paulo, Brazil, was in Sweden for several months studying the most recent developments in the steel industry with a view to introducing new methods to operations in Brazil.

Dr. Jesuino Felicissimo, mining engineer of the Institute Geografico e Geologico, Sao Paulo, Brazil, recently arrived in the United States to study mining methods used by operators of some of the phosphate deposits in Florida.

Dr. Rui Ribeiro Franco, Professor of Mineralogy and Petrography at the University of Sao Paulo, Brazil, and Editor-in-Chief of "Mineracao e Metalurgia," Brazilian technical magazine, recently arrived in the United States and is working at the Geophysical Laboratory, Carnegie Institute, Washington, D. C.

F. W. Witt was recently appointed manager in Africa of the United States Bureau of Federal Supply for the General Services Commission and has set up headquarters at Johannesburg. He is on a two year mission to increase supplies of minerals for U. S. stockpiles and will seek mainly anthracite, chrysotile asbestos, beryl, chemical grade chrome, cobalt, columbite, syanite and mica from Rhodesia.

A. Bean has resigned from his position as chief inspector of Mines Malaya and is now living at Adelaide, Australia.

A. H. Merrin has been re-elected president of the Victorian Chamber of Mines Australia. *J. L. Moore*, *A. E. Llewellyn*, *G. Dickenson* and *A. Wolskel* were named vice presidents.

R. T. Madigan, after studies and experience in United States plants, has been appointed ventilation engineer to the Zinc Corporation, Australia.

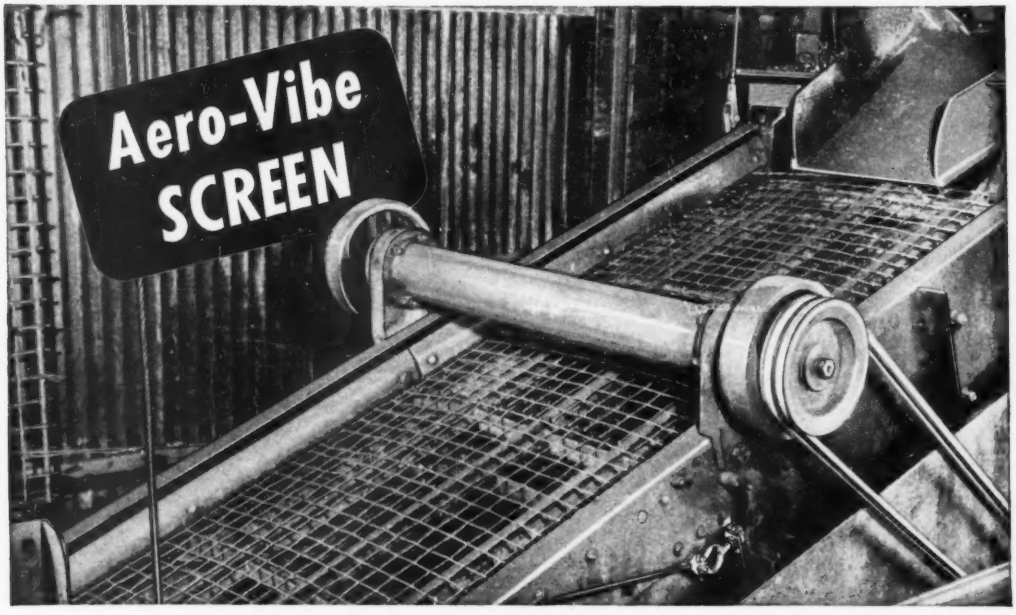
J. Wilfred Patterson, metallurgist of Aspen, Colorado, and Salt Lake City, Utah, is at Noumea, New Caledonia, to examine a number of chrome, copper, zinc-lead and cobalt properties on which Pacific Engineering Mining and Trading Company has options. The company has already compiled maps, geological reports and estimated tonnage records on the properties to be examined by Patterson and has formed an exploitation corporation to further development of the minerals in the area.

M. L. Sethi, director of Mines and Geology, Rajasthan, India, reports that this new province is formulating a uniform mineral policy to develop the large reserves which include lignite coal, gypsum, silica sands, mica, lead-zinc and copper.

H. D. Forman has been appointed general manager of Yale Lead and Zinc Mines, Ltd., Toronto, Canada. He was associated with Base Metals Mining Company and more recently Torbrit Silver Mines before his appointment.

MEXICAN IMPORTERS VISIT U. S.

Pictured above are Marte R. Gomez, former Secretary of Agriculture and Secretary of Treasury of Mexico; J. Lozenzo Sepulveda, Executive vice-president of Equipos Mecanicos S. A., Mexico City, and William A. Finn, General Manager, Export Division, Worthington Pump and Machinery Corporation, which is one of Equipos Mecanicos U. S. accounts, on a tour of Worthington's Harrison, New Jersey works. Mr. Finn points out a large impeller casting for a centrifugal pump.



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MORE THAN 10 YEARS AGO this processor installed the 5x10 ft double deck *Aero-Vibe* screen shown above. Today this Allis-Chalmers vibrating screen is still going strong . . . still producing 100 tons per hour of graded 3 x 1½ and 2 x 1½-inch products—and working two shifts every day.

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- Makes separations from 20-mesh to 1⅜ or 1½-inches square.

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Aero-Vibe is one of a complete line of vibrating screens built by Allis-Chalmers. Others include the *Low-Head* horizontally operating screen and the *Ripl-Flo* inclined deck sizing screen. Both are widely used in rock and ore preparation. A-C offices or distributors in principal cities in the U.S.A. and throughout the world.

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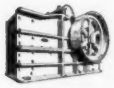
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FRENCH MOROCCO — The Moroccan lead smelter at Oueb el Heimer, which has been newly constructed, produced approximately 2,600 tons of lead in 1948, all of which was sent to France to the Noyelles Godault refinery. The production target for Oueb el Heimer for 1949 is 1,000 tons of lead a month.

RHODESIA—Progress on one of the new Rhodesian gold-producing properties was reported from the *Pickstone* mine, where the main shaft has been sunk and timbered to 75' and sinking is proceeding to the third level horizon. The second level drive east has intersected the ore body, which was found to average good minable quantities of gold over a partly-exposed width of 53". Driving is proceeding.

TRANSVAAL—A drift from the shaft on the fifth level of the *Northern Transvaal Copper* has encountered the copper ore body discovered at a depth of 600' by a diamond drill hole. The ore is reported to be of good grade and the plans are not yet drawn as to what extent development will be undertaken.

SOUTH AFRICA — Sinking has been completed in the world's deepest single-lift vertical shaft. This is No. 3 shaft of the *Vogelstruisbult* gold mine situated about 40 miles east of Johannesburg, and is an eliptical shape, 6,652' deep. The concrete-lined shaft is divided in two by a central wall, thus allowing both upcast and downcast ventilation. In addition, the shaft is to be equipped for hoisting, but this work has not yet been completed. Sinking operations were started in May, 1944.

SOUTH AFRICA — The directors of *Rustenburg Platinum Mines* and of *Union Platinum Mining Company* announce that negotiations for the amalgamation of the two companies, reported last month, have been completed. Rustenburg will acquire all the assets and assume the liabilities of Union Platinum as from the close of business August 31, in exchange for an issue of £106,000 worth of shares in Rustenburg, created by an increase in capital from £500,000 to £606,000.

NIGERIA—Estimates of Nigerian lead-zinc reserves are believed to be far larger than the tin deposits, the department of commerce reports. Government and private mining engineers who have been investigating the lead-zinc situation thoroughly have become increasingly optimistic over the potentialities of development.

ISRAEL—Machinery for a new rolling mill to produce steel reinforcing bars and light structural products has arrived from France and additional equipment is to come from the United States. The plant which will take approximately a year to assemble and will cost close to £ (I) 1,000,000 will have a capacity of 40,000 tons a year. The mill is being erected at Haifa.

EGYPT—New laws for obtaining permits to prospect for oil and minerals throughout the country are being prepared for Parliament's consideration, according to Dr. Mahmud Abu Zeid, director-general of the Mines and Quarries Department of the Egyptian Ministry of Commerce and Industry. The laws will take into account existing foreign regulations as well as the needs of Egyptian companies, contracting parties and the Treasury.

TANGANYIKA—According to latest reports, better values have been encountered in the development in the *New Saza* mine. During the quarter ending on June 30, 20,499 tons of ore was treated in the mills and bullion shipments amounting to approximately 5,500 ounces of gold and about 6,000 ounces of silver were reported. Development work is proceeding and other expansion plans are under way.

NIGERIA—O. V. G. Hoare, chairman, *Gold and Bose Metal Mines of Nigeria*, reports that output for the current year is running at the rate of more than 600 tons. Also, tin concentrate output in 1948 was 515 tons as compared with 509 tons in 1947.

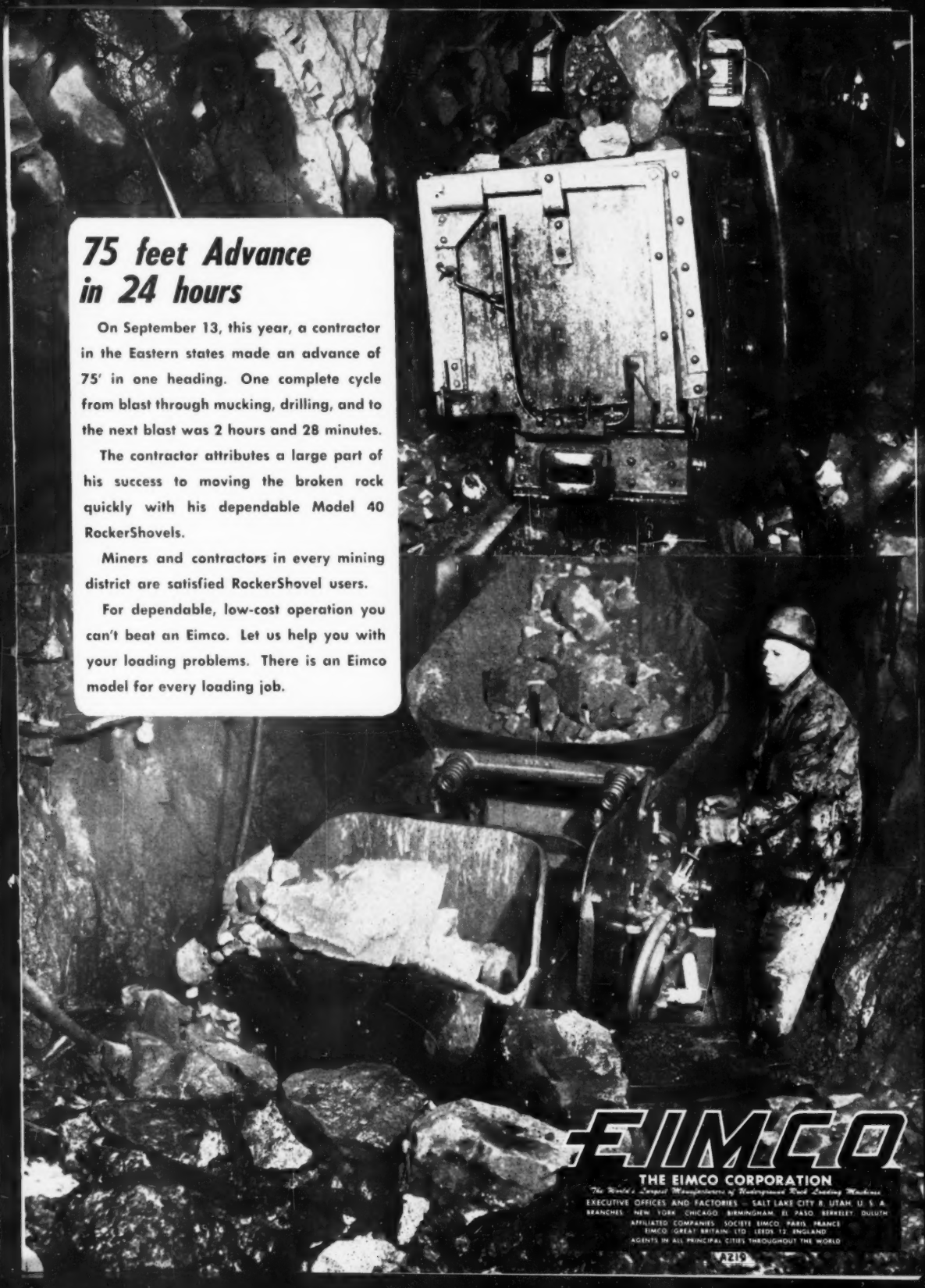
FRENCH NORTH AFRICA—Production of zinc in French North Africa amounted to approximately 16,000 tons during the first six months of 1949. Of this amount, nearly 10,750 tons was produced from calamine from Algeria. Studies of Algerian deposits have not yet resulted in satisfactory results. In the first quarter of 1949 Morocco produced 2,300 tons of zinc and 26,000 tons of lead. Exploration is in progress now, however, and is proving that the extraction of zinc in the *Zellidia* zone will soon exceed the tonnage of lead that is mined at present.

TRANSVAAL—The new price of gold has enabled the Transvaal mines to take a 15 percent increase in wages to white collar labor in its stride. The expected increase in costs to the industry is calculated to be in the order of £1,900,000. The minimum wage rates of native labor have been increased by 3d. a shift for underground workers and 2d. a shift for surface workers. Some of the better news from the Rand is the remarkable rise in the amount of native labor available for the mines. An increase of 297,489 for last month (September) having just been announced. September is usually a bad month and a decline was expected. Should this be permanent, it should enable many Rand mines to work at three-quarters or four-fifths capacity and mining costs should materially improve as a result.

RHODESIA — The Minister of Mines, A. D. Davenport, announced that for the first time in history the Colony's mineral output would be valued at more than £10,000,000 for the current year. The base metal in-

TIN IN THE BELGIAN CONGO

The Societe Generale Industrielle et Chimique du Katanga (Sogechim) has installed important plants at Jadotville-Shituru, where one of the principal centers of the Union Miniere is. This plant is one where cassiterite is reduced to tin. The company has made special studies of its tin deposits at Bukena and Kania and is engaged in a survey to bring water to the placers. Earth filled dams have been built to accumulate the water necessary for two small pilot washing plants. Experiments have shown that in spite of the fineness of the alluvial cassiterite, an excellent recovery is possible, running as high as 95 percent.



75 feet Advance in 24 hours

On September 13, this year, a contractor in the Eastern states made an advance of 75' in one heading. One complete cycle from blast through mucking, drilling, and to the next blast was 2 hours and 28 minutes.

The contractor attributes a large part of his success to moving the broken rock quickly with his dependable Model 40 RockerShovels.

Miners and contractors in every mining district are satisfied RockerShovel users.

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A219

dustry will profit increasingly from the devaluation of the pound as the railroad facilities of the port of Beira are improved. Prospecting and claim staking are now allowed for the large quantities of uranium said to exist in the Colony, but export will be allowed only under the strictest provisions.

OCEANIA

AUSTRALIA — The Australian Aluminum Commission now controls crude bauxite deposits approximating 8,500,000 tons, a sufficient supply to insure domestic production for many years to come. Despite this crude reserve, rising freight rates in Australia may make imported bauxite cheaper. The new light car industry is expected to increase consumption of aluminum.

PAPUA — Preliminary work by *C.S.I.R.O.*, based on an ore sample containing 2.7% copper, 2.0% zinc, 41.4% iron, 35.5% sulphur and 2.7% insoluble, as well as small amounts of lead arsenic and gold which have come from the *Laloki* mine, Sapphire Creek, indicate that pre-aeration of the bulk in the beneficiation circuits, an unorthodox procedure given publicity by C. G. McLachlan of *Noranda Gold Mines, Ltd.*, of Canada in 1930, gives definite results in the recovery of copper and zinc. With proper control, pre-aeration may improve considerably the flotation recoveries of Australian ores, particularly those in which highly reactive sulphides occur. The Laloki ore has been described previously as consisting of massive sulphides in a quartz gangue. The principal sulphides are marcasite, pyrite, with very subordinate amounts of chalcopyrite, sphalerite, and galena. And, besides, the ore carries about 3 pennyweights gold per ton.

AUSTRALIA — The Commonwealth government is investigating the possibilities of obtaining sulphur within the sterling area and of increasing local Australian production, the result of the devaluation of the Australian pound which has increased the cost of U. S. sulphur to the Commonwealth. One of the principal uses of sulphur in Australia is in the manufacture of superphosphate, the principal form of fertilizer used in Australia.

VICTORIA—Bendigo's *North Deborah* is the only gold mine able to maintain regular production of payable ore in this state. Good yields have been obtained at times by *Central Deborah* and *South Virginia*, but the tonnages are small. Recent yields follow: *North Deborah*, 2,126 tons yielded 927 ounces of gold; *South Virginia*, 216 tons yielded 150 ounces gold.

PHILIPPINES — It is announced that production at *Benguet Consolidated Mining Company's* property in the Philippines is running about 1,800 tons of gold ore per day. Judge J. W. Haussermann, president of the company, reported at a recent stockholders' meeting. Two thousand tons a day should be reached before too long and the ultimate goal is 4,000 tons daily. Benguet suffered considerable damage during the war and $8,000,000 has been spent on rehabilitation up to the beginning of this year. The sum of $3,315,958 of an estimated $11,050,755 in war damages has been paid.

NEW ZEALAND — Another example of a mine saved from extinction by devaluation is provided by the *Martha* mine of the *Waihi Gold Mining Company*. The Reserve Bank of New Zealand raised the buying price of gold from 8 pounds 8 shillings per ounce to 12 pounds 14 shillings, a margin sufficient to enable the mine to keep going. The 95 men who have been employed at the mine keeping things turning over will be increased considerably. The yield from the *Martha* gold mine last year was 26,957 ounces.

WESTERN AUSTRALIA — H. V. Rowe, general manager of *Bewick Moreing and Company*, has conferred with directors of the *Blue Spec Gold Mine*, N. L., and a new company is expected to be formed to carry out developments on the gold-antimony showing on a considerable scale. The Australian government has consented to underwrite the mine's indebtedness to the Commonwealth from £220,000 to £40,000.

NORTHERN TERRITORY—*Mount Todd* gold mine is still troubled with metallurgical difficulties as 140 tons of ore yielded 51 ounces of gold and 30 ounces was estimated to remain in plant solution.

NEW CALEDONIA—As the result of the Australian coal strike, the Society of Nickel has endeavored to obtain coke from the United States to permit the reduction of nickel ore to nickel matte. As a consequence, it is thought that the production of nickel will be down somewhat in New Caledonia in the last half of the year.

SOUTH AUSTRALIA — An acid plant constructed at Port Pirie by the South Australia government in association with *Broken Hill Smelters* is expected to begin production of superphosphate in 1951.

WESTERN AUSTRALIA—*Norseman Gold Mine*, for the four weeks ending September 13, produced 1,047 tons of ore and 1,807 tons of concen-

UNITED STATES VISITOR FROM "DOWN UNDER"

A man from "Down Under," Klem B. Gross of Mount Isa Mines, Ltd., Mount Isa, Queensland, Australia, takes the opportunity to compare mining methods with two United States miners while in El Paso, Texas, for the International Mining Days celebrated from October 27 to October 29. Pictured with Gross are W. H. Goodrich, Kennecott Copper Corporation, Hurley, New Mexico, and L. B. Bentley, Torpedo Mining Company, Organ, New Mexico.

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Ideal tool for light to medium drilling. Can be equipped with auger rotation.

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Powerful rotation prevents stalling even in heavy, sticky, formations.

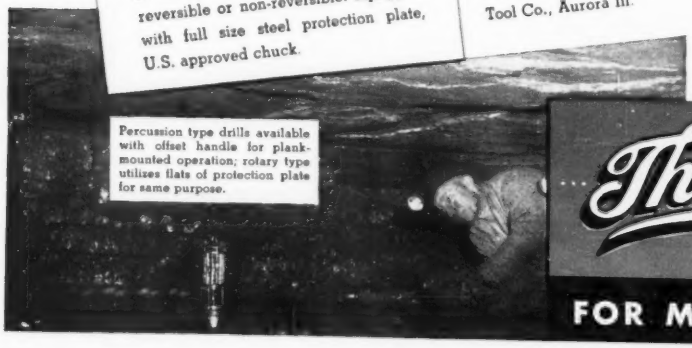
ROTARY TYPE

Coal Auger Capacity: 2"

Available in speeds 700 to 450 R.P.M., reversible or non-reversible. Equipped with full size steel protection plate, U.S. approved chuck.

POWERFUL . . . ECONOMICAL . . . SAFE!

Designed particularly for blast hole drilling in coal mines, these Thor PERCUSSION TYPE and ROTARY TYPE pneumatic coal drills meet every requirement for sure, safe, easily controlled power drilling. Exclusive heat treating process assures amazingly long life for operating parts. Easily operated forged steel retainers on percussion type tools; rotary type equipped with chuck developed to meet safety code of United States Bureau of Mines. For complete information and demonstrations, see your Thor distributor or write Independent Pneumatic Tool Co., Aurora Ill.



Percussion type drills available with offset handle for plank-mounted operation; rotary type utilizes flats of protection plate for same purpose.

Thor PORTABLE POWER TOOLS

FOR MODERN MINES

trate which were estimated to contain 1,164 tons of dried sulphur. Following the rise in the Australian price of gold, the management of Norseman will investigate the possibilities of resuming gold production, which was discontinued when milling grade ore fell below 3 pennyweights per ton.

EUROPE

GREAT BRITAIN—John Blackwood Hodge & Company of London has imported a very large walking dragline excavator, made by the Marion Power Shovel Company of Marion, Ohio, and obtained to help raise the domestic iron ore output. The machine, consigned to *United Steel Company's* workings at Scunthorpe, Lincolnshire, should be in operation by the end of the year. Bucket capacity is 12 cu. yds. One of the Government's principal aims since the war has been to increase the home production of ironstone ores. Currently 13,500,000 tons are being produced each year and about 8,000,000 imported. By 1953 home production should be increased to 18,000,000 tons, according to plans now in effect, and will save Britain about £32,000,000 a year in foreign currency. The successful operation of the excavator is expected to arouse the interest of British companies in buying large-capacity machines.

ENGLAND — At Luckett, Cornwall, an old tin mine has been reopened after about 70 years of lying idle. A mill with a capacity of 30,000 tons a year has been installed. Ore will be crushed and shipped to Liverpool for smelting. This mine is one of three tin mines in Cornwall now in production.

GREECE—Through trade agreements with France, Greece will export 4,000 tons of crude magnesite, 4,000 tons of caustic calcined magnesite and 500 tons of chrome.

SWEDEN—According to contracts with the Soviet Union, Sweden will receive 10,000 tons of manganese ore, 500 tons of ferromanganese, 4,000 tons of asbestos and 30,000 tons of apatite concentrate, among other products.

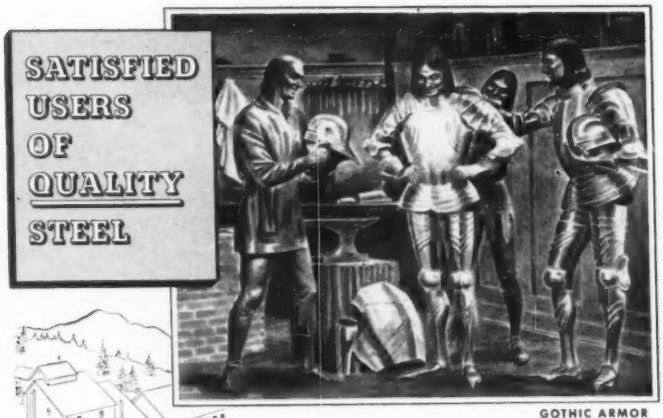
WALES — *Mining Holdings Corporation Ltd.* of London has bought the *Lisburne* and *Crosswoods Mines* in North Wales. At one time a large amount of lead-zinc ore was taken from the 30 mines on the property but operations have been slight lately. The new owners have completed exploration and expect to regain substantial tonnages of zinc and lead concentrates from the large dumps left by former operators. Work is also to begin in some of the 30 mines.

NORWAY—The Norwegian government has loaned *AS Sulitjelma Mines* 1,200,000 kr. to complete the *Avilon* tunnel to the *Sagmo* mine. The new tunnel will open the developed body about 150 meters below the present deepest working. The new working will offer an excellent place to diamond drill to explore for new ore bodies. The tunnel is now about 1,800 meters long and the company plans to finish the last 1,700 meters in about two years.

SWEDEN—The Swedish Minister of Supply, Mrs. Karin Kock, has appointed four experts to make proposals for establishing a state-owned company which, on April 1, 1950, is to take over the mines previously owned by the Germans in Sweden. This will put under one head the following companies: *Horkens Gruv AB, Stora Langviks Gruf AB, Gruv AB, Lekomberg, Haksbergs Nya Gruf AB, AB Stollberg* and *AB Nya Noragruvorna.*

FINLAND—With an estimated 1,000,000 tons of copper ore proved, the new mine at Aijala in southwestern Finland is producing 300 tons of copper ore a day.

YUGOSLAVIA—To aid in the discovery of raw materials and the development of mining technique and mining processes, a Central Science



GOTHIC ARMOR

Gothic Armor is indicative of the best days of armor craftsmanship in the 15th Century. The many parts were hammered out over variously shaped "stakes" of iron . . . with the help of forge and anvil. Special attention was given to forming surfaces that a weapon would slide off, rather than stick into.

Like Gothic Armor, CF&I Forged Steel Grinding Balls and Rods have long been known for their quality . . . and have satisfied users all over the world.

In the United States, for example, of the 61 major mining properties and cement plants using forged steel grinding balls in the eight western mining states, 54 use CF&I Balls . . . of the 12 major grinding rod users in those states, 11 use CF&I Rods.

For maximum grinding per dollar, specify CF&I Balls and Rods.

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BEATS A FLEET!

Even a fleet of trucks couldn't match the big volume, low-cost ore handling job this S-A designed conveyor system does at this iron mine! Fast movement of more ore, less maintenance and elimination of a long uphill haul by trucks over winding roads were all accomplished as planned when this S-A ore handling system was installed.

For nearly half a century S-A engineers have been designing and installing big volume, low cost bulk materials handling systems to meet specific requirements in every field of industry. Their "Know-How" learned from years of experience plus the S-A line that includes every type of conveyor, enables them to recommend the *one best* system *every* time.

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CANISTEO MINE
NEAR BOVEY, MINNESOTA

The S-A designed and equipped handling system for this iron mine consists of three separate belt conveyors, linked together at transfer houses, carries ore up 18° incline from truck hopper dumping station in bottom of open pit to ore washing plant at top. There, ore is washed, screened, crushed and loaded into rail cars for shipment to lake port ship loading docks. This S-A conveyor system is 1000 ft. long . . . belts are 30" wide . . . capacity is about 700 tons per hour.

STEPHEN S-A ADAMSON MFG. CO.

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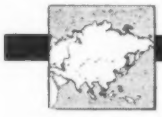
DESIGNERS AND MANUFACTURERS OF ALL TYPES OF BULK MATERIALS HANDLING EQUIPMENT

Research Institute has been formed which is attached to the Ministry of Mining in Yugoslavia. Also, the new Institute will give aid in exploring for new raw materials and cooperate with other scientific institutions.

HOLLAND — Showing considerable improvement over the past twelve months the output by the *Royal Dutch Works (Koninklijke Hoogovens en Staalfabrieken)* is up over the past year. In 1948-49 approximately 289,000 metric tons of iron were exported compared with approximately 195,000 tons in 1947-1948.



KOREA—The Russians are busily engaged in mining uranium ore in northern Korea, according to reports that have reached American quarters in Seoul. Radioactive ore is being produced in two locations in Whangahi province and sent to Russia for processing. Unconfirmed reports indicate that Russian miners are working the deposits by open pit. The location of the mines is said to be near Ullyul and Sinchon, approximately 150 miles northwest of Seoul and about 25 miles north of the Ongjin peninsula.

JAPAN — The *Kononai* gold mine in Hokkaido owned by the *Seika Mining Company* completed development and construction work and now is in operation. It is estimated that gold in the amount of 1,400 kilograms and silver in the amount of approximately 22,000 kilograms per year will be produced.

TURKEY — Development and operation of the *Turhal* antimony deposit is now seriously considered by Eti Bank. The Turhal property is reported to have 70,000 tons of crude ore assaying 11% antimony, which is to be concentrated in a 60-ton-per-day flotation plant. Plans on this project have been completed and submitted to the ECA and it is hoped that the necessary mining and milling equipment will be obtained through the Marshall Aid Program.

INDIA—In the districts of Bhagalpur and Monghyr in Bihar are numerous indications of ancient workings in connection with the mining of galena and chalcopyrite. These mine dumps give indication of the presence of pitchblende, the richest ore of uranium, but the quantity is quite small. Therefore, the help of the new government of India has been sought and attention is directed to the establishment of a survey to assess the possible value of the new deposits.

TURKEY — Construction work on the surface plants of the *Murgul* copper mine is progressing according to plan. Setting up of the flotation section of the new mill is reported to be completed.

CHINA — During the war with Japan, the bauxite deposits of Yuennan and Kweichow provinces were discovered and some exploration work done. Since the war, geological work has been done and the prospects show good promise. American capital and American engineers are generally regarded as the solution to the problem of the development of these deposits.

TURKEY — Work on the concentrator at *Guleman* chrome mine and the flotation plant at the *Ergani* copper mine is approaching completion. These two plants are scheduled for operation in early 1950. Ores to be treated at these plants were tested by the Southwestern Engineering Company and construction and installation are under the charge of the

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1—#76 Marcy, drum scoop feed, everything else except motor and liners.
1—7'x 36" Hardinge Conical Ball Mill, 125 HP motor, 2200 volt, v-belt drive, liners, starting equipment.
1—4½'x 3' Ball Foundry Ball Mill, liners 50% new, 35 HP slip ring motor.

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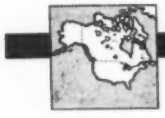
JAPAN — Since the temporarily enforced shutdown of the gold mines effective in 1942, the gold mining industry of Japan has languished. However, a reconstruction plan has been launched and an estimated 10 tons of gold per year will be produced. Some of the mines already are in operation.

MALAYA — In early October the *Kampar* No. 2 dredge of *Southern Kinpa* started to turn over after completing trials and is going at a good rate at present. The dredge is equipped with 11½ cu. ft. buckets.

TURKEY — The new shaft being sunk at *Keciburlu* sulphur mine has reached the orebody. Development drifts are being opened in ore which assays 80% sulphur.



NORTH AMERICA

ALASKA—Placer drilling operations have begun at Louis Smith and Tony Lindstrom's property at Wilbur creek in the Livengood district. They intend continuing development work until weather shuts down the workings completely.

SASKATCHEWAN—In the Goldfields area, *Orbit Uranium Developments, Ltd.*, has discovered six more radioactive zones in shearing and averaging somewhat over two feet wide and 100' in length. Colin S. Johnston, consulting engineer, stated that Geiger readings were encouragingly high. Additions to the crew and an air drill have helped to speed development of the showings.

YUKON TERRITORY—*United Keno Hill Mines, Ltd.'s*, new 250-ton mill near Mayo is commencing operation, according to F. M. Connell, president. Output will be developed to about 200 tons daily as rapidly as possible. Next year's objective is production of 3,000,000 oz. silver and 7,000,000 lbs. of lead.

ALASKA—A promising gold-antimony property at Sunset Cove near Windham Bay, Alaska, has been developed during the biennium by Herman Kloss, and Jack Davis. Approximately 200' of tunnel and shaft have been driven; a small mill was constructed and operated intermittently. A unique feature of the deposit is the occurrence of metallic antimony along with stibnite in a wide quartz vein that carries values in gold.

CANADA — Further encouragement to small gold mines through subsidies is planned, according to Resources Minister Colin Gibson. The benefits of the Emergency Gold Mining Assistance Act will be extended to properties with relatively low production.

BRITISH COLUMBIA — Milling was resumed at the *Sheep Creek* gold mine near Salmo last month after a shutdown through most of the summer in line with the company's recent policy of intermittent operation. The mill has a capacity of 150 tons. Several new orebodies have been opened up. Meantime the company's base metal subsidiary, *Zincton Mines*, is operating at full capacity at Zincton. Diamond drilling in the upper levels, where silver-lead-zinc orebodies are being developed, is reported as distinctly encouraging.

BRITISH COLUMBIA—*Privateer Mine, Ltd.*, Vancouver, has started exploration and development of a group of silver-lead-zinc claims on Kootenay Lake and Woodbury Creek, about two miles north of Ainsworth. C. Harry Hewat, formerly mine superintendent at the Privateer mine at Zeballos, is directing the program. W. S. Hamilton is consulting engineer.

ALASKA—Reports from Dawson advise that a gold strike of some value has been made by Lon Philpott on bench ground above the Firth River. Equipped with the first thawing machinery to be brought to this area, Philpott made the strike by sinking holes to bedrock.

QUEBEC—A better than expected record has been made by *Consolidated Duquesne Mining Company, Ltd.*, in the first four months of operation of its gold properties at Duparquet and Destor townships, northwestern Quebec. Ore is being treated at the nearby Beattie mill and the expected 4,000 tons per month milled went up to 5,000 tons in August. The plant is being electrified and extensive exploratory work is planned, both in underground work and surface diamond drilling. Ore widths expected to be 7' have consistently averaged 15', considerably raising the estimates of reserves.

BRITISH COLUMBIA — Nearly $4,000,000 worth of gold bearing ore has been proved by a diamond drilling program at *Morris Summit Gold Mines* property, Portland Canal mining area. The company will erect a 100-ton cyanide mill to process the ore and expects a return of between 1¼ and 2 million dollars. Three years of development work costing $500,000 has included 17,000' of diamond drilling and 3,974' of underground workings, according to H. C. Ketcheson.

ONTARIO — *New Jason Mines'* program is getting underway very well at Casummit Lake, northwest Ontario, and further expansion has been indicated by the successful gold recovery made so far. A gold bar worth $28,905 was poured at the end of one 15 day period. The mill average was 102 tons per day during September and will be increased to 150 tons gradually. Diamond drilling at the 800, 900 and 1,000' levels has hit good ore so the three-compartment shaft is being sunk to those depths. Further construction of mine buildings is planned also.

CALIFORNIA — Development is under way on some of the *Yellow Aster Mining and Milling Company* lode gold claims at Randsburg, Kern County, California. S. D. Fraser, P. D. Shorey and C. O. Wise leased several claims and expect either to sink a shaft or drive a tunnel — depending on further investigation—for ore showings on the surface. The men plan to re-activate the nearby *Little Butte* mill to handle Yellow Aster ore, and will install electricity. Development of claims south and east

ASCOT ADDS TO CANADIAN ACTIVITY

About $100,000 will be spent by Ascot Metals Corporation on an underground program, recommended by A. V. Corlett, consulting engineer, at its copper-lead-zinc holdings near Sherbrooke, Quebec. The shaft is to be sunk 600' and three new levels added. The present 250-ton mill will undergo several changes to increase efficiency. Dewatering of three levels in operation during the war and connecting of new hydro-electric power equipment has been finished. Additions to the mine crew have made a two-shift schedule possible and three drill holes recently completed have cut values in zinc, lead and copper. Harold G. Way is superintendent of operations.

of the Fraser leases has begun by lessee Peterson and milling of gold from Yellow Aster property bought by *Hard Cash Mining Company* is progressing under the direction of Ben S. Stevens who in turn has leased from Hard Cash. He has installed hoist and gallows frame to sink below the present 52' level in the main shaft.

NORTHWEST TERRITORIES — The milling rate at *Giant Yellowknife Gold Mines*, now at 365 tons, is being increased to 400 tons and will, after six months, be increased even further. Sinking is underway at the No. 3 shaft on the company's Great Slave Lake property. With the stockpile gone, only current concentrates are to be handled henceforth.

ONTARIO—*Camray Mines*, Alona Bay, has completed shaft sinking to its 120' objective and is cutting a station on the first level. The shaft was put down at the eastern end of a 245' zone of pitchblende which extends into the bay. Drifting east and west along this zone is under way.

ALASKA — The *Northern Tin Company* has finished operating for the rest of the year at its Buck Creek, Seward Peninsula, mines after a good season. Clifford Smith, manager, said that recovery was especially good due to the use of equipment new to the area. The company will reopen next year as soon as weather conditions permit.

NEVADA — The *Lucky* group of copper claims in the Lathrop Wells district, 28 miles south of Beatty, are now being developed by Tom Beard, operator of the Boulder Industrials Minerals Corporation. He leased the claims from owner Claude Looney and has already moved in necessary equipment, including compressors and heavy dump trucks. Tunnelling has begun at four points along the mile of outcropping deposits. When exploration is concluded an open-pit operation is expected to be feasible. Ore will go to Salt Lake City for treatment.

QUEBEC—According to Premier Duplessis, the *Hollinger North Shore Exploration Company's* Ungava iron ore project will not return any profits on investments until 150 million dollars in exploration and development has been spent. By then, he predicted, Sept Isles and Havre St. Pierre will have become big industrial centers. There is some discussion at present about the feasibility of building a bridge across the Moisie River for $1,000,000. The bridge would be part of the 360-mile railway from Burnt Creek to Sept Isles and would serve the region as well as the mine.

ONTARIO—The Canadian *Johns-Manville* asbestos project near Matheson proceeds at incredible speed. Since the first work started in March, 45,000' of drilling has been done. A new road, one and a half miles long, has been built across the swamp, and muskeg excavations for the mill, storage buildings and service buildings are finished, concrete has been poured and steel erection is well under way. The mill will be 360' by 50' and five stories high. Construction began on it September 1 and it is expected to be in operation May 1, 1950. Bob Baker, mine superintendent, said that average overburden is 25 to 30' deep and that mining will be carried on by the open pit method down to 300' after which underground procedures will go into effect. The company is spending several million dollars on initial work.

BRITISH COLUMBIA — *Cariboo Gold Quartz Mining Co., Ltd.*, at Wells, reports to its shareholders that a new ore zone, first indicated by diamond drilling and now opened up by drifting has shown better than average grade and larger tonnage than expected. The vein is on the 1,500' level. Also, work in the ground under the lake has revealed a new and extensive orebody. Officials feel that after six years of hard going, Cariboo is at last proving out original expectations.

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SASKATCHEWAN — Pitchblende showings, stripped 173' and exposed a total of 300' at *American Yellowknife Gold Mines'* property at Goldfields, appear to average a profitable grade so far. By careful sorting, the company expects to average 1.62 per cent ore to be sent to the Eldorado refinery at Port Hope. The property is being developed by American, which owns 30 per cent of the ground. *Athone Mines, Goldcrest Mines* and *Greenlee,* which hold 25, 25 and 20 per cent, respectively.

NEVADA—*Combined Metals Reduction Company,* which owns extensive perlite deposits at Pioche, Nevada, is continuing its research on perlite products to develop as high uniformity and quality as possible for the rapidly expanding market for light-weight plaster and concrete. Jean R. Driggs, Sr., is in charge of this branch of the company. Construction firms are using light-weight aggregates in increasing amounts, and, as a result, Combined Metals has grown into one of the biggest perlite companies in the west, with some of the most efficient crushing and expanding plants now used.

QUEBEC—A gold showing of unexpected value has been found by *Consolidated Duquesne Mines,* Noranda. D. H. Angus, vice-president and managing director, reported that the gold occurred in a stope off the 500' level. This stope had yielded lower than average ore until the strike was made. Past diamond drilling at the mine has not been done in this section at all, so that no knowledge exists as to the extent of the ore showing. The ore so far tested is richer than any other found at the mine to date.

LATIN AMERICA

CHILE—The mine of the *Chile Exploration Company* at Chuquicamata in northern Chile plans to increase its production of copper by 20 per cent to a rate of 15,000 tons monthly as a result of increased demand and consumption of electrolytic copper in the United States.

PERU—The *Compania Minera El Pilar* near Cerro de Pasco is producing high grade oxide lead concentrates that are shipped to the United States through local agencies. The flotation plant was completely furnished by the Morse Brothers Company of Denver. This recently erected concentration mill ranges in capacity from 70 to 100 tons of ore daily. Consideration is being given to future expansion for the treatment of both oxide and sulphide ore. The mill is under the supervision of J. P. Giles.

PERU—*Negociacion Minera L. A. Proano* has already installed an additional ball mill-classifier circuit as well as flotation cells which will help in increasing production of lead concentrate. This company is under the technical direction of Mario Samame B.

BRAZIL—A deposit of djalmaite, a uranium mineral, has just been discovered in Sao Joao del Rey, Minas Gerais. This deposit is said to be approximately 4 miles long and has a width which varies from 20 to 50 meters. The mineral contains 5 per cent uranium, 75 per cent tantalum and 20 per cent calcium, iron and other minor metals.

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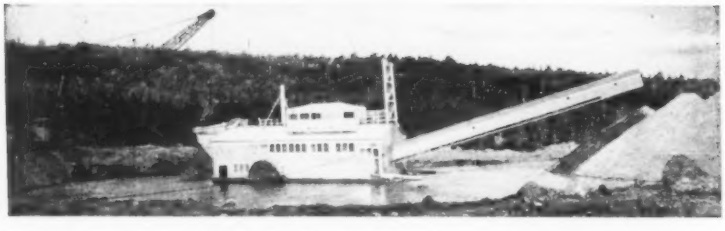

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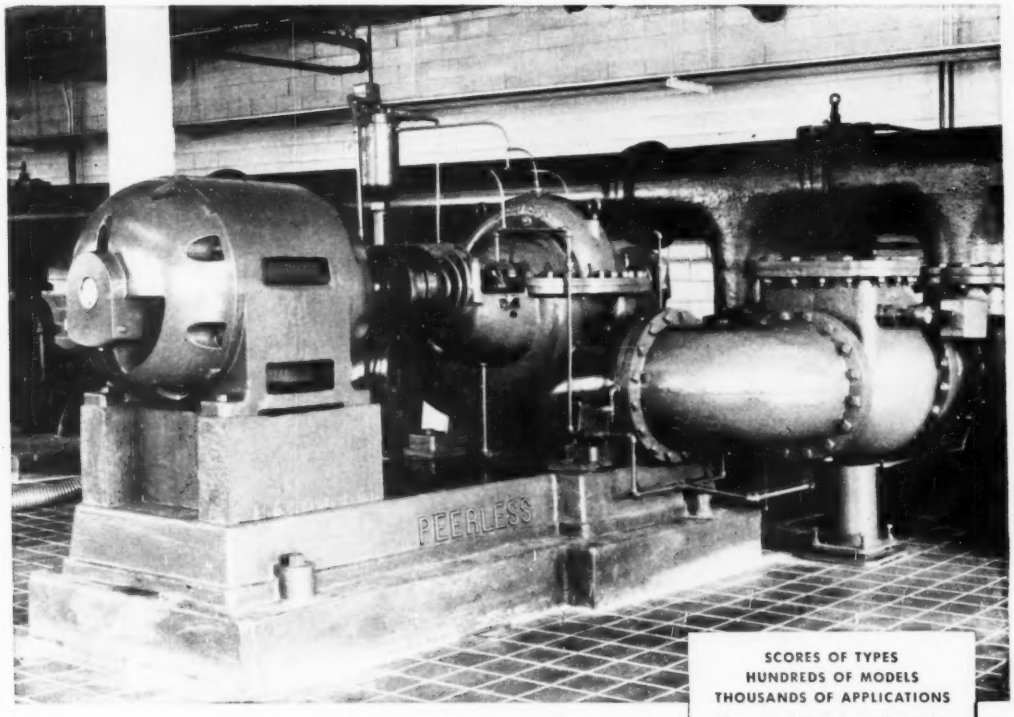

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ing region at Huachocolpa (Huancavelica) has resulted in an overcrowding of the railroad operating between Huancayo — Huancavelica. This railroad, lacking for quite some time proper equipment, will be aided considerably by the planned construction of the 20 miles connecting the two above mentioned points. The truck transportation from Huachopolca to Lima will then necessitate only 14 hours.

CHILE—A subsidy for the small mining industry is being studied in Parliament. The metal mining industries have been very hard hit by the fall of the price of most base metals, and the government is contemplating a subsidy, to be paid through the Cajade Credito Minero for metal miners. About 3,000 men depend upon Chile's small mining industry for a living, most of them are owners of their own mines and sell their ores or concentrates to the Caja de Credito Minero.

PERU — The *Mateo Ovradovic* mining enterprise which operates, among others, the *Rublo* and the *Peseta* mines in the Huachopolca region will increase operations in the near future. Mining, as well as gravity concentrating equipment, will allow production of high grade silver bearing lead concentrate. It is expected that gravity concentration tailings will be sent for further treatment to the *Banco Minero* concentrator at Huachopolca. Ovradovic's enterprise is considering the purchase of a complete flotation plant.

DUTCH GUIANA—The *Billiton Company* has sought a license to prospect in the Nassau Mountains where, during a scientific exploration expedition some months ago, bauxite of a quality superior to that being mined in the present deposits was discovered, according to a Dutch press report recently released. Bauxite constitutes the principal export of Dutch Guiana. This commodity makes up about 80 per cent of the exports of the country.

PERU—The new decree by the Peruvian government only a few months ago which allowed mining companies to keep 100 per cent of their dollars received for ores metallurgical products exported to other countries has given new incentive to the industry. Of late the industry has been going through a tough financial period due to high costs of production, labor and equipment as well as to the low prices of metals. The new decree has been received with great satisfaction by everyone concerned. The official rate of exchange is 6.485 soles per dollar but actual pre-market rate ranges between 17.50 and 18.00 soles per dollar.

CHILE — To develop the proper industry for the smaller Chilean owned mines, the government-owned *Corporacion de Fomento* has approved a project for an electrolytic copper refinery with a capacity of 15,000 to 20,000 tons a year but at this date a location for constructiing the plant has not been decided upon. Two copper concentrators with a capacity of 200 and 400 tons of ore per day respectively also are planned. A sum of 30,000,000 pesos has been approved for the completion of a new extrusion plant which will be purchased from the United States and construction of this plant is to begin in a short time at a location near Los Cerrillos airport in Santiago.

PERU — The *Jesus Maria* mines owned by Agustin Arias have started development operations. These mines are supposed to start producing high grade lead-silver ores in the near future.

BOLIVIA— Bolivia again led the shippers of custom lead ore to Trail, British Columbia, with the weighing in of 1,189 wet tons of lead ore as compared to the second highest lead shippers which was United Keno Hill of Mayo, Yukon Territory, which shipped 558 wet tons of concentrate for the same period.

PERU—A notable increase in the activities of the mines at Huachopolca is observed, such as the *Emita* mine owned by J. Salazar which is under the management of J. Devescovi.

CHILE—A claim has been filed by Francisco Reguiles of Santiago, Chile, on a nickel deposit he reports he found while prospecting in a stone quarry between Bulnes and Concepcion. Nickel has not been known to exist in the country until this time.

BRITISH GUIANA — Installation of a gas producer power plant costing $47,000 is well underway at *Cuyuni Goldfields, Ltd.*, Aurora Landing. President W. J. Asselstine announced that completion is scheduled for the end of the year at which time a new shaft sinking program is to start. During the development work only a tailings operations has been carried out.

BRAZIL — Reports say that the *Usina Siderurgica de Mogi das Cruzes* has bought material for a blast furnace, blooming and rolling mills and two steel furnaces in order to expand its Sao Paulo steel plant. The addition of this equipment would up production from 70,000 to 200,000 tons per year.

BRAZIL — Chromium exports are again resuming from Brazil after a two-year slump. Shipments have been sporadic for 20 years and estimates of reserves are only several hundred thousand tons, a figure which might be improved if steady exporting were attained to provide a stimulus to prospectors and developing companies.

MEXICO — Arturo Fernandez reports that work has started on a new claim, the *San Marcial*, near Pachuca, Hidalgo. Exploration and development has been successful enough to warrant a 25-35 ton flotation mill, to be built at the end of the year, and additional mining equipment is being moved in.

CHILE — A report has been received that contracts exist between Chile and Italy, Western Germany, Argentina and Columbia, providing for copper exports to these countries. Chile's copper exports to the United States declined at about the time these contracts were reported.

MEXICO — The *Mazapil Copper Company, Ltd.*, Concepcion del Oro, Zac., Mexico, is reconditioning one of its copper furnaces in order to smelt lead ores, according to a report received from Ernesto Graham, mill superintendent.

CHILE — Iron ore exports in 1949 are expected to be 600,000 tons greater than exports in 1948. Slow but steady development projects should realize an even greater margin in 1950.

ATTENTION! ALL FOREIGN READERS

The copy of WORLD MINING you are receiving regularly, consisting of a carefully selected portion of the complete American edition of MINING WORLD, is being sent with the compliments of our organization and advertisers in the interests of mining the world over. If you would like to receive the complete American edition of MINING WORLD, send in this card or write us.

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ADVANTAGES OF MULTIPLE SPIGOT HYDRAULIC CLASSIFIERS PROVED IN PLANT INSTALLATIONS

Something new in hydraulic classifiers is now being offered by the Deister Concentrator Company in its Concenco SuperSorter, one installation of which already is in successful operation at Detroit Lakes, Minnesota. This unit is an 8-cell machine at the Becker Sand & Gravel Company's washing plant that went into operation the last week of August and has proved to be outstandingly successful. Prior to this, a coal handling installation has been handling successfully 400 tons per hours of feed that runs -$1\frac{1}{4}$".

Already negotiations are under way for an installation in the phosphate field and, from the standpoint of classification, the principles involved indicate that the machine will have application on high capacity classification jobs, especially on iron ore, other metallic ores, sand and gravel and crushed stone.

Although the company has not yet attempted to enter the Mesabi Range, it was the intention to bring the Concenco SuperSorter to the attention of the operators before the end of the 1949 shipping season and to have an installation on the Mesabi for the 1950 shipping season. Already proved in one branch of the mineral dressing industry, the machine promises to be one of wide application and interest.

Hydraulic classification is an old and well known process. This process has long been used as a low cost, simple and efficient means of sizing granular materials, of preparing the feed to a battery of concentrating tables or similar devices, or as a direct means of concentrating certain materials. However, generally speaking, it is only in those few commercial units capable of producing only a two part split (a spigot or rake product and an overflow product) that large capacities per unit have been obtained.

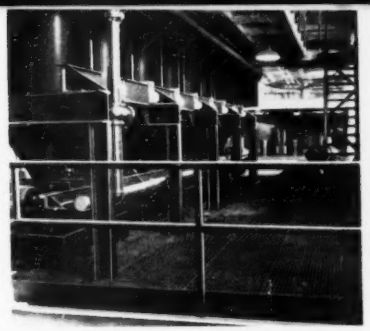
Until recently, engineering opinion generally has accepted the conclusion that expansion of cell size, particularly the working zone cross sections of this type of classifier to provide for high tonnage handling rate, was impossible because development in that direction invariably halted with the failure to maintain the necessary conditions within the cell for any worthwhile results. The barriers of the past, however, were overcome in the development of Concenco's giant classifier, which maintains teeter and zone densities hitherto impossible in large cell cross sections necessary for handling substantial capacities.

The Concenco SuperSorter is now available to meet that long-felt need for a multiple spigot, rising current classifier of sufficiently high capacity for economic handling of coal, sand, iron ore, phosphate rock, and similar granular materials. The first industrial application, a battery of four 8-cell units, has been in successful commercial operation for several months. These SuperSorters have proven themselves outstanding in performance, both capacitywise and for efficiency of classification.

The size and proportions of the Concenco SuperSorter can be visualized quickly from the following general data. The all-steel cell unit construction, including top launder and 6" H-section supporting legs, stands 14' high. It is 6' wide and accounts for approximately 5' in the overall length of the machine. The 8-cell unit has a length of 40', and weighs approximately 16 tons.

A feature of the Concenco SuperSorter is the innovation for control of spigot discharge. Each classified spigot product is intermittently drawn off, with measured precision, from a quiescent bed at the bottom of the cell. High capacity discharge of product is maintained with minimum water content and without disturbing the rising water currents or unbalancing classification in the sorting column immediately above. The novel constrictor valve mechanisms that control the draw-off from each cell are readily adjustable in operation over a wide operating range from open 90 percent, to closed during 100 percent of each cycle.

The only power required is for actuation of the tandem operated constrictor valve mechanisms. A 1 to $1\frac{1}{2}$ H.P. motor and gear reducer amply provides for even the largest size units. With no other moving parts on Concenco SuperSorters, operation costs are amazingly low.



Giant Concenco SuperSorter classifier installation, one of a battery of four, in actual operation. This 16 ton, 40' long machine is the first one of such large size that has been used successfully in a commercial installation.

Thor Has New Line of Portable Saws

A new line of Thor "Silver Line" portable electric saws, featuring exclusive long-shaft transverse motor mounting for extra power and longer tool life, is announced by Independent Pneumatic Tool Company of Aurora, Illinois.

Six new models are available in the new line in 6", 7", 8", 9", 10", and 12", sizes. Exclusive features include die cast aluminum housings, fully re-enforced and protected to withstand rough handling; steel inserts for bearings and threads to maintain critical parts in permanent alignment; built-in saw blower, blows from the inside and keeps cutting line clear and motor free from dust; steel rip guide with adjustments for any thickness of material being cut; giant switches, largest ever built into saws, which give positive protection against accidental starting; smooth operating automatic ball bearing blade-guard with rubber snubber; finger-tip control for depth and bevel cuts—no wrenches needed; and complete ball bearing construction using larger bearings than in any saws of this type; convenient handles for better balance and easier handling.

For further information and illustrations request Thor Silver Line Circular. MINING WORLD, 121 Second St., San Francisco, Calif.

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NEW METHODS — NEW EQUIPMENT

FREE MANUFACTURERS' LITERATURE

PRESSED STEEL TURNTABLES: Hardinge Company has just issued a new 4-page bulletin #48, on its line of pressed steel turntables, designed for any material-processing or industrial operation where rail cars are used.

SQUIRREL CAGE MOTOR STARTER: Allis-Chalmers oil-immersed, full voltage Type 371 wall-mounted starter for control of squirrel cage motors and the primary of wound rotor motors of 350 hp. or less, at 2,300 volts is described in a new bulletin, number 14B7274.

INDEPENDENT-PNEUMATIC TOOL COMPANY'S new circular on new Thor Silver Line portable electric tools is now available upon request.

MINES EQUIPMENT COMPANY, recently taken over by Joy Manufacturing Company, has just published two new bulletins; one covers MINES new "Emergency Belt Control System" and the other illustrates the company's new pre-fabricated trolley pole connector assemblies.

Copies of all bulletins may be obtained by writing MINING WORLD, *121 Second St., San Francisco 5, Calif. Please refer to bulletin number and issue in which it appeared.*

ATLAS POWDER COMPANY'S new booklet "Rockmaster 16 Blasting System" recently off the press, discusses in detail millisecond delay in blasting.

WHEEL TRUEING TOOL COMPANY announces their new Drill Bit Catalog just off the press.

EUCLID ROAD MACHINERY COMPANY has released a new book, "Euclid Loader for High Speed Loading of Large Hauling Units."

HARDINGE COMPANY has issued an 8-page bulletin describing a new automatic sampler. The literature describes in detail the operating mechanism of the sampler, including typical installation arrangements for both wet and dry processes.

BENEFICIATION: Let American Cyanamid Company engineers assist you with your beneficiation problem. Send in your inquiry.

CUMMINS ENGINE COMPANY recently announced production of a new supercharged NHRS-600 Diesel engine. Complete information may be obtained by writing MINING WORLD.

MINE SAFETY APPLIANCES COMPANY recently published a new bulletin No. TA-17 describing the M.S.A. Velocity-Power Driver which drives steel studs instantaneously into steel, masonry or concrete.

THE DEISTER CONCENTRATOR COMPANY'S bulletin 14 H describes and illustrates their Leahy No-Blind vibrating screen.

CHICAGO PNEUMATIC TOOL COMPANY offers their new bulletin No. 814-2 which offers authoritative information on concrete vibrators.

MARION POWER SHOVEL COMPANY'S bulletin 393 gives the complete story of the Marion 151-M, 6 cubic yard shovel, designed for continuous service in rock.

DIESEL ENGINES: In addition to present models, Caterpillar Tractor Company is now producing four new engines ranging up to 500 hp., and four new Electric Sets generating up to 314 kw. Ask for specifications.

LOCOMOTIVES: Write for Goodman Manufacturing Company's Bulletin CL-491 which describes its trolley, storage battery and combination types of locomotives.

DIAMOND CORE DRILLING: Boyles Bros. are equipped to give you complete service in exploratory and blast-hole drilling or tunneling operations. Request details.

CRUSHERS: Nordberg Manufacturing Company's Symons Cone crushers are available in three types—standard, short head and intermediate—and in a wide range of sizes to fit your requirements.

FLOTATION: Dow Chemical Company's new "Flotation Index" is now ready and available upon request. It is a comprehensive handbook of flotation fundamentals.

CONVEYORS: Jeffrey Manufacturing Company's belt or chain conveyors will meet your operating conditions. These sectional type conveyors mean continuous transportation at low cost. Complete information upon request.

SHOVEL LOADER: The Joy HL-3 Shovel Loader for small drifts can load up to two tons per minute. Write for details.

GEIGER COUNTER: W. D. Brill Company's pocket-size "Nuclear Sniffer" weighs only two pounds and uses two ordinary flashlight batteries for power.

ORE TESTING SERVICE: Complete information on laboratory ore testing as provided by the Denver Equipment Co., representing experience data derived from working with over 150 different commercial minerals and materials from all parts of the world.

BALL AND ROLLER BEARINGS: Link-Belt Company's ball and roller bearings are described in a catalog which will be sent upon request.

THE OSGOOD COMPANY will send complete details and specifications of their power shovels, cranes, draglines, clamshells, backhoes, pile drivers and their metered Osgood Air Control; and application of their equipment in mining operations.

ROTARY DRYERS, KILNS, COOLERS: Hardinge Company has just released a 32-page catalog on its complete line of "Ruggles-Coles" rotary dryers, kilns and coolers. Ask for Bulletin 16-D.

MINE CARS: Catalog No. 40 will describe C. S. Card Iron Works' mine cars.

AUXILIARY CORE DRILLING EQUIPMENT: "Joy Core Drill Supplies and Equipment" is the title of a new catalog on auxiliary core drilling equipment recently issued by Joy Manufacturing Company. When requesting Bulletin D-18 state type core drill on which equipment will be used.

CLASSIFIER: Just off the press is The Dorr Company's Bulletin No. 2281, which describes and illustrates a new and distinctly different Dorr classifier.

GYRATORY CRUSHERS: Important features, general dimensions and capacity information on the Superior McCully gyratory crusher for primary and secondary reduction of stone and ore are described in Allis-Chalmers Manufacturing Company's Bulletin 07B6004B.

BLASTING: The twelfth edition of E. I. du Pont de Nemours & Company's Blasters' Handbook is now available. Copies at $1.50 each.

MECHANIZED UNDERGROUND LOADING METHODS: Complete data on mechanical loading methods, sizes, types of machines and specification for varying underground conditions can be obtained from literature published by Eimco Corporation.

DIESEL ENGINES: Four new bulletins have been published on Nordberg's new one-cylinder engine. Specifications, detailed information and outline drawings of Nordberg Model 4FS-1 Diesel engines as adapted to power takeoff with and without clutch, generating units and pumping units. Ask for Bulletins 166, 167, 167-A and 168.

ELECTRIC TOOL PRODUCTS: Independent-Pneumatic Tool Company has released new literature on the company's latest universal electric tool products. Catalog E-2.

Jeffrey Now Has Foreign Sales Representative

Robert A. Currie, Export Manager of The Jeffrey Manufacturing Company, Columbus, Ohio, announces the appointment of Corneliussen & Stakgold, Inc., 101 West 31st Street, New York City, as foreign sales representative for Continental Europe, effective immediately.

Fred R. Pinter, Executive Vice-President of Corneliussen & Stakgold, advises that a Jeffrey mining engineer will be available for consultation at the company's European headquarters at 3, Canal de l'Ancre, Antwerp, Belgium.

The Jeffrey Manufacturing Company for many years have been a leading manufacturer of mining, material handling and processing equipment. To insure prompt service in the supply of spare parts, stocks will be maintained in a bonded warehouse in Antwerp.

Lost Gold Ledge

Continued from Page 26

ore. They would start early in the evening at one end of the row of saloons and gambling houses and never stop until they had reached the other end. They had to "hist 'em high and frequent" to keep up with the wily old Frenchman. Many who could not stand the pace dropped out before they were half down the line. Those hardy souls who managed to keep on their feet were in such an advanced state of intoxication that they didn't give a whoop whether they had a gold mine or not. When they all were laid out and before any had time to sober up, Frenchie was well on his way to the hills.

Things went along smoothly for several months, and then one day Frenchie decided to make his trip in the wagon and bring back enough gold to last him for months instead of weeks. After another hard night of drinking and carousing he managed to elude the gang that was continually trying to follow him and set out in the wagon drawn by two Indian ponies.

Days, weeks, and months passed, but Frenchie never returned. Neither his squaw nor his friends were ever able to learn one word as to what had happened to him. The squaw surmised what had transpired and returned to her people on the reservation. Her own people were close-mouthed and reluctant to talk about such things, but the story gradually leaked out.

Itseems that Manuel Ortiz, a Spanish-American born on the Pima-Maricopa Indian reservation almost a quarter-century ago, and six Maricopa scouts were out early one morning tracking Apache horse thieves who had run off some of their horses during the night. They spied Frenchie coming down the long ridge with a large sack of gold ore on his back. The scouts surrounded and captured him, then tied him and his sack of ore on one of their horses, and took him to a shallow water hole near where the adobe walls of old Maricopa now stand. They threw the sack of gold into the shallow well and when it fell with a thud in the mud and slime, poor old Frenchie fell forward into the hole on top of the gold, struck dead by a cudgel in the hands of one of the scouts. Each of the six scouts threw a rock into the hole, as was their burial custom, viewed their work with grim satisfaction unmingled with remorse, then mounted their horses and rode single file across the hills, cutting for signs of the Apache horse thieves.

The squaw lived to a ripe old age and now lies buried in one of the graves that mark the old Indian burying ground in the low foothills on the north side of the Estrellas. Manuel Ortiz, now living in Chandler, Arizona, knew the squaw well and heard this story from her own mouth. Ortiz feels confident that the sack of gold ore still lies at the bottom of the old well, but he has no desire to disturb the skeleton of Frenchie sprawled over the gold.

The squaw, in telling the story to Ortiz, said that Frenchie remained true to his promise never to beat her again, and that he often purchased clothing and provisions for the two. However, she could not help but feel that she was only enjoying a precarious probation and old Frenchie was apt to go on the warpath at the least provocation. She was unable to account for his sudden change that morning when he sat warming himself before the stove unless it was a throwback to his early training in far-off France.

Some of the old Indians who live near Komatke, when in a talkative mood, point to the high wind-swept ridge and tell you that there lies a small vein of quartz containing wires and masses of bright yellow gold, and that at certain times of the year, when a light rain is falling, strange white shimmering lights dance up and down the long ridge and disappear as suddenly as they came. Many Spanish-Americans, Indians, and Mexicans believe where these strange shimmering lights appear a treasure is sure to be found. Who can say?

As far as this writer knows no one has ever found or even looked for the small stringer of gold ore that led old Frenchie to a tragic death.

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SOME GOLDEN THOUGHTS ALOE-FLAVORED

• About a year ago in this column I frankly criticized the "poor press" that the 1948 Western Division gathering of the American Mining Congress had in the local metropolitan dailies, "run-of-mine." The mining technical press, *of course* "covered" the gathering as a whole, advance and retrospect. Which mining-periodical coverage *was read by men of our own industry, and NOT by John Q. Public—the guy it is vitally necessary to EDUCATE as to the perils that beset the whole industry today.* We mining men *don't need* the orchids.

• Lots of thinking mining men — operators and engineers—agreed with me. Hope they'll agree *again*, for I'm saying the same thing in the same way *for the same reasons* as to the 1949 Mining Congress convention at Spokane. Our own periodicals covered it in fine shape—the "majors" like this magazine, and the Little Fellers, too. Best of the LF's, in handling of AMC presentation, was *Pay Dirt* of Phoenix.

• But when — *oh, WHEN* — will our industry's leaders wake up and have the Inner Side of our truly-imperilled industry presented to the General Public via the metropolitan dailies, and such news mags as *Newsweek* and *Time, Collier's* and the *SEPost*? When will double-page ad-space be bought *and used effectively—and continuously*? I dunno . . . *you* answer it, Brother!

• Death took a grand old man of our industry November 4, in Solomon Guggenheim. Any attempt at eulogizing would be waste-rock. We salute Sol's memory. In odd coincidence, the same day Frank Short "went West" in San Francisco at 73—veteran engineer-expert, internationally famed, in gold mining and dredging. Guggenheim was 15 years older. Another salute. . . .

• Speaking of gold: That conservative East Coast banker Allan Sproul, President of the *(hold your hat!)* Federal Reserve Bank, New York District *(Lord bless him!)* stuck his neck *WAY* out at the wind-up session of the ABA convention in San Francisco . . . and heretically *rooted from the rostrum for a free gold market.* Oh—*Brother!* Don't tell *ME* the leaven's not working! True, the hidebound bankers (cf. Evans Woollen, retiring president) lit on Al's neck with a chorus of wild shrieks of disapproval. What Johnnie Snyder said wasn't published in the paper I read. But . . . may I crow a small pianissimo crow . . . ?

• In paragraph five of this column in the October WORLD, I called the shot on Stafford Cripps' flipflop on the Pound Sterling, at the International Conference at Washington. And in the same paragraph I poked my neck 'way out and forecast a devaluation of the Yankee Dollar —meaning a hike-up in the thrice-accursed $35 price of gold. Okay, men—I'll stand pat on that one, too . . . *watch it happen.* Never mind what Snyder has *SAID*—watch what he *DOES*. Cripps had to veer. Snyder will, too. And then——

• Well, gold miners can once more make an honest dime. I have a "horse's-mouth" report from New York that that's precisely what is doing and brewing.

• Almost overlooked Randolph Burgess, Chairman of National City Bank of New York. At the SF convention he plumped squarely for *RETURN TO THE GOLD STANDARD!* Good thought to sign off on—*two* eastern bankers out for *Hard Money!*

• An encouraging flicker was when (the very day Sol Guggenheim died) Kennecott and Phelps Dodge upped their copper prices 7_{8}c, to $18\frac{1}{2}$c a pound. British followed suit, same day. There *IS* some balm in Gilead!

Addison N. Clark

MINING MEN AND THEIR ACTIVITIES

About men who are well known and prominent in American metal mining circles

Reed F. Welch replaced *Brent N. Rickard* as manager of the Tucson, Arizona, ore-buying office of the American Smelting and Refining Company on October 1. Rickard retired from active duty, but remains in an advisory capacity until July, 1950. Welch was ore buyer for AS&R at Salt Lake City until his appointment.

L-R. S. C. OGBURN, JR., was made manager and director of Foote Mineral Company's new Research and Development Department at Berwyn, Pa., where improved products, markets and processes in the metal field will be worked out.

Frank Smith and *Larry Doheny* expect to spend the winter at their mining properties at Wild Lake, in the Endicott Mountains, Alaska.

Mike Kinsella, who leased and worked some of the upper workings of the Morning mine, Mullan, Idaho, for several years, is now superintendent for Coeur d'Alene Mines, Osburn.

Joseph H. Hedges, superintendent of the Bureau of Mines' Southwest Experiment Station at Tucson, Arizona, has been transferred to Washington, D. C. There he will head the Minerals Division, one of the five main divisions being set up by the Bureau in its reorganization plan. Hedges had been stationed at Tucson since 1942. Taking his place at Tucson as acting chief is *W. R. Storms*, who formerly was supervising engineer of the Bureau's offices at Silver City, New Mexico.

Stanley W. Parfet resigned from the New York and Honduras Rosario Mining Company, El Salvador, and has moved to 3906 Sussex Road, Wilmington, Delaware.

Guinn E. Metzger, formerly with the Resurrection Mining Company, Leadville, Colorado, has gone to Alaska to work.

August Streshley is now employed at the Crouch gold mine, Kingston Canyon, Lander County, Nevada.

J. E. Despins has been appointed branch manager of the El Paso, Texas, office of the Allis-Chalmers Manufacturing Co.

H. L. McKinley, former plant manager for the U. S. Vanadium Corporation's Pine Creek, California operations, has been made general superintendent. He succeeds *David D. Baker*, who resigned.

D. W. Boise moved from Hurley to Silver City, New Mexico, where he can be reached at 917 West St. He is with the Black Range Consolidated Mining Company as secretary-treasurer.

Ben Melby, former mill superintendent for Admiral Consolidated Mine, Northport, Washington, is now living at Salmon, Idaho.

B. C. Erickson, University of Minnesota graduate, is at Hibbing, Minnesota, with the mining engineering department of the Oliver Iron Mining Company.

John Lamprecht is at Virginia, Minnesota, working for Oliver Iron Mining Company's mining engineering department. He is a recent University of Minnesota graduate.

Pierce C. Walker, previously manager for Lincoln Mines, Inc., Hiko, Nevada, is now at Cripple Creek, Colorado, where he is working on a new 200-ton mill to treat the gold-silver ores of the Cripple Creek District.

Herbert Parliment, geologist, is doing examinations for New Jersey Zinc Explorations Ltd., Quebec, Canada. He was formerly employed by New Calumet Mines Ltd.

W. B. Tobey resigned as chief engineer of Polaris-Taku Mining Company, Ltd., to work with Pioneer Gold Mines engineering staff, British Columbia.

C. M. Campbell, Jr. was recently made mine manager for Camac Mining Company, Ltd., which is developing property on Vancouver Island, Canada.

Ernesto L. Graham is living at Concepcion del Oro, Zacateas, Mexico, where he is mill superintendent for the Mazapil Copper Company, Ltd. He had been with Cia Minera de Penoles, S. A., Avalos, Zac.

Jesse C. Johnson is at Washington, D. C., as deputy manager for the Atomic Energy Commission's Raw Materials Operations office. He will work with *John K. Gustafson*, manager, in administrating the AEC program for production and purchasing of raw materials.

HOWARD J. VAN DER VEER, geologist and mining engineer, has been named regional chief of the Division of Adjudication, Bureau of Land Management for the Colorado - Utah region.

J. C. McCutcheon transferred from mine superintendent to manager of Silbak-Premier Mines Ltd., which has mining offices at Premier, British Columbia. He once managed Relief-Arlington mines and also worked for American Smelting and Refining Company in South Africa.

Charles E. Stoot, George Guillott and *Lewis W. Ferguson*, United States mining engineers, are on a three-month trip through British, French and Portuguese territories in Africa. Travelling under the auspices of the ECA, they will survey the possibilities of developing deposits in these countries for the relief of the shortage of nonferrous metals and for increased home consumption. If they obtain favorable results, Marshall Plan funds may be allocated for exploration and development.

Don Cannon, formerly employed by The Grandy Consolidated Mining, Smelting and Power Co., Ltd., is now in charge of exploration for Lake Expanse Gold Mines, Ltd., a Toronto company now examining properties in British Columbia.

WILLIAM J. COULTER former general manager for Climax Molybdenum Company, Climax, Colorado, has been elected vice-president in charge of mining operations. He has been with Climax for 22 years.

Richard G. Smith has been elected president and general manager of the Natomas Company, Sacramento, Calif.

Walter G. Hay has assumed position of superintendent of the rod and wire mill of Anaconda Copper Company, Great Falls, Montana.

H. S. Worcester resigned as president of Telluride Mines, Inc., Telluride, Colorado, and succeeding him is *E. S. McCurdy* of San Francisco. *C. F. Parker, Jr.*, is advanced to general manager; *T. McCandless* will become mine superintendent, and *Arthur Hilander* will be chief engineer.

James V. Mazuries succeeded *R. D. Peterson* as superintendent of rolling mills at Geneva Steel Company, Geneva, Utah.

Fred S. Mulock will succeed *Michael H. Kuryla* as president of the U. S. Smelting, Refining and Mining Company upon the latter's retirement March 1, 1950.

Alan A. Sharp, mining engineer

with the Safety Division, U. S. Bureau of Mines, has been transferred from the Phoenix, Arizona, office to Denver, Colorado.

John Eliot Allen, formerly geologist with the Oregon Department of Geology and Mineral Industries, has accepted the position of head of the Department of Geology at the New Mexico School of Mines at Socorro.

S. R. DuBravac, Henderson, Nevada, was recently named acting manager of the Basic Magnesium plant for the Nevada-Colorado River Commission by Governor Vail Pittman.

Frank Silva, recently loaned by the American Smelting and Refining Company to Kennecott Copper Corp. for the purpose of designing a refinery at Garfield, Utah, has moved, with the office, formerly maintained in Baltimore, Md., to Garfield, where he will remain until some time next spring.

John C. Kinnear, Jr., has been appointed assistant general manager of Nevada Mines Division of Kennecott Copper Corp.

M. J. Unger was recently elected president of Ambassador Mines Corporation, Trout Creek, Montana. *John Cross* is vice-president, and *Dale Lanphere* and *Edward J. Sverdsten* are directors.

Frank H. MacPherson, former manager of the Polaris-Taku Mining Company, Vancouver, B. C., has been appointed manager of the AEC Raw Materials Office at Grand Junction, Colorado.

Eugene C. O'Connell has been appointed manager of the San Francisco, California, branch of the Independent Pneumatic Tool Company.

Peter D. Nora, Jr., is now a member of the research laboratory force of the Jones & Laughlin Ore Company. A metallurgical engineer, he will engage chiefly in winter research.

C. E. Harter and *K. L. Prothero*, mechanical engineers, have joined the Oliver Iron Mining Company's mechanical staff at Hibbing, Minnesota, as trainees.

Paul Zinner, chief of U. S. Bureau of Mines, Minneapolis Branch, has been appointed regional director, covering seven states.

K. Higley, electrical engineer, is now with the Oliver Iron Mining Company at Virginia as a trainee. *E. H. Hane*, mining engineer, is a trainee in the company's mining department.

P. V. Burgett, Virginia, Minnesota, chief engineer of the Oliver Iron Mining Company's eastern district, has been appointed to the State Board of Registration of architects, engineers and surveyors by Governor Youngdahl.

William Plummer, Coleraine, Minnesota, retired general superintendent of the Oliver Iron Mining Company, is recovering from a recent illness and operation.

B. C. Elsley has been appointed assistant superintendent of Baroid Sales Division of National Lead Company. He was formerly with Benguet Consolidated Mining Company as geologist.

Alaeddin Aksoy, for several years project engineer at Eti Bank, has resigned his position and is now employed at Lafayette College in the United States. He is teaching ore dressing and process metallurgy.

K. C. Stansmoor, assistant manager for foreign sales for the Dorr Company, is traveling in Australia visiting mining fields.

Obituaries

Charles K. McArthur, Dorr Company metallurgical engineer, died suddenly in Seattle, Washington, in late October.

Clifford D. Woodward, 71, chief engineer for Anaconda Copper Mining Company, died recently of a heart attack.

Solomon R. Guggenheim, 68, millionaire copper mining executive, died recently of a heart ailment. He and his six brothers built the American Smelting & Refining Company into the world's largest single producer of refined copper, and, at one time, he was one of the largest shareholders of the Anaconda Copper Mining Company.

James R. Hobbins, president, Anaconda Copper Mining Company, died suddenly at Butte, Montana, in mid-November.

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Capitol Concentrates

Continued from Page 19

of the 81st Congress, those who need such a measure are going to have to get together and tell their congressmen what they want and insist that everything possible be done to enact sensible and satisfactory legislation.

We are about to enter a political year and western support is badly needed by the Administration. The White House should be informed in no uncertain terms that blocking and delaying tactics of the past will not do. The mining industry is onto that technique and is heartily sick of it. Congressmen, back home where thinking is clearer, should be told that there must come an end to monkeyshines sometime and that now is as good a time as any to lay down the law to the government agencies.

● *Reverse of the Coin*

The attitude of the government on tariffs is further emphasized by the remarks made by President Truman at the meeting of the International Bank and Monetary Fund which was attended by representatives of 48 countries.

"One of the principal things I think you have to work out," said the President, "is to do away with the obstacles to world trade. We must exchange on a world basis the services and the goods of all the countries among themselves. We would like for you to buy the things we think we can make best, and we should buy the things which you can make best. In that way we will have what they call a balance of trade."

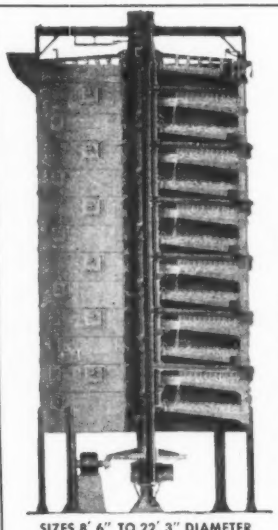
In the face of this kind of a statement it can clearly be seen what attempts at obtaining White House approval of differential tariffs or increased tariffs on specific items would get. If the Administration persists in its free-trade attitude—and there is a large body of economic thought to the effect that this is a pattern for saving the world from collapse—there is only one alternative by which our affected industries may at the same time be saved — subsidies and incentive payments. It seems strange that the President's economic advisers do not realize more clearly that their stress on free trade necessitates a liberal policy of subsidies. If free trade is a weapon to keep the world from chaos, subsidies and incentive payments are the reverse of the coin and will have to be used to keep our domestic economy from chaos.

● *To Buy American*

Although the Senate Appropriations Committee, when it slashed the stockpile appropriation, "directed" the Munitions Board to "Buy American," this "directive" is without real force except to show what might be the temper of the committee when the next appropriation is up for hearings if the mandate had not been carried out. Foreign procurement is necessary in many instances and few advocates of stockpiling have ever objected to it. What has irritated Congress is the failure of the board to pay any attention to the policy directives in Public Law 520 which tells the Administration to give American mining a break. Now a committee has been appointed, with U. S., U. K. and Canadian members, to study United States customs procedures, regulations imposed upon the use of E.C. Aid (and they are not many), methods of increasing the overseas investments by the United States, and "commodities and stockpiling." The metals and minerals section of ECA is having quite a time placing its money. Reports around Washington indicate that the results so far have been very disappointing.

● *Administration's Wishes Prevail*

The Administration won all its points in the Senate during attempts to amend the Trade Treaties Act in



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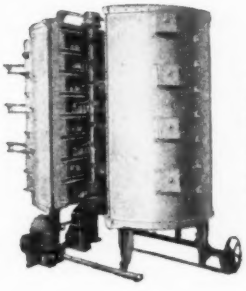

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favor of domestic producers! But the margins were very small. The so-called Millikin peril - point amendment, which was calculated to make the Administration stop, look and listen when the tariff-cutting negotiations would have imperiled any domestic industry, was only knocked out by the Senate leaders by a 43 to 38 vote after the party whips got very busy indeed. The Malone substitute, which would have dropped the Trade Treaties mechanisms in favor of differential tariffs based upon the costs of production abroad, was defeated 64 to 17, showing that the principle has little strength even with Malone's fellow Republicans. And it is Republicans these days who are high tariff boys!

● *Havenga Makes Proposal*

N. C. Havenga, finance minister of South Africa, has asked to be "rescued from the bargain basement of the world." He was referring, of course, to the low price of gold. Putting forth a new proposal, Havenga said South Africa would be willing to "sacrifice" half of its output at the present price of $35 an ounce if it could have a free market for the other half. This is very different from the prior proposals for increasing the monetary price of the yellow metal. As no one knows exactly how much gold would saturate the "free" gold market the results of such an action applied to all gold-producing countries would be interesting indeed. The proposal was referred to the gold committee of the Monetary Fund for discussion and recommendation.

● *Gold Is Sidetracked*

Secretary of the Treasury Snyder has sidetracked a fight by South Africa on the gold question by referring to the executive directors of the Monetary Fund for study the proposal that half the production of newly mined gold be sold without the usual $35 an ounce price ceiling. Such a "study" should smother the proposal neatly.

● *"Economic Waste"*

When Henry Morganthau, Jr., was appointed Secretary of the Treasury, objections were raised in the Senate because, it was said, he had had absolutely no experience in handling money. A number of years have passed and a great many billions of dollars have passed through his hands since then. Now he is an international financial expert and is writing articles on what is wrong with the world dollar-sterling situation. A sample of his writing follows:

"The suggestion that the United States in present circumstances raise the price which it pays for gold not only is of no help in meeting the basic problem, but may actually have harmful effects here and abroad. . . . In the first place, the diversion of economic effort from the production of essential goods and services to the mining of gold is economic waste which the world cannot afford. Moreover, a rise in the price of gold may quite possibly intensify the private hoarding of gold and gold speculation which already exists on a large scale in certain areas of the world today."

It is nice to know that people feel it worth while to hoard something that the Secretary of the Treasury thinks it an economic waste to produce!

● *"San Francisco Plan"*

The principle of the bill, known as the San Francisco plan, to subsidize mercury, antimony, tungsten, and manganese by making direct grants to producers out of customs duties is proving to be a popular idea. It is reported that a bill to subsidize the pottery industry with 50 per cent of the customs duties collected on imports of pottery is getting quite a play in the House. Some 15 Representatives are backing the idea, and a rash of similar bills to aid other depressed industries is expected.

The bill embodying the San Francisco plan never was reported by the Senate Interior and Insular Affairs Committee. Testimony showed that only a handful of producers of the four strategic metals would benefit, and Chairman O'Mahoney remarked, "We must legislate as broadly as possible for the whole industry."

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Vanadium Corp. Finds New Uranium Orebody

A uranium-bearing orebody, six miles northeast of Marysville, Utah, has been reported by Vanadium Corporation of America.

The deposit is part of a 200-acre claim leased by the company and has been under development for the past few months to determine the exact type of ore. Ore taken out during the development period has been run through the mill at Naturita, Colorado, in an effort to determine a method of treatment to extract the uranium.

President W. C. Keeley described the deposit as a new type and commented that "it looks very promising."

COLORADO

New transformers are being installed for electric power for the mill of the *Chain O'Mines Operators, Inc.*, at Blackhawk, Colorado. The company is also about to begin a surface operation near its glory hole.

Opening date for the remodeled *Uravan* plant of the *U. S. Vanadium Corporation* is now estimated to be the first of the year. The plant has been redesigned to handle considerably greater tonnage of carnotite than before. A transfer station is being built at a point on the railroad for trucks to pick up ore destined for milling at Uravan.

There was much activity recently at the new *Carlton* mill, Cripple Creek, Colorado, when the 74' gin pole was erected on the foundation for the fine ore bin. The gin pole will be used to erect the large steel ore bin on the concrete platform which has been constructed. The bin to be used is one formerly located at the *Golden Cycle* mill in Colorado Springs and has been taken apart and transported to the present mill site. The new completed bin will be 62' in diameter and 60' high and have a capacity of 5,800 tons. From the bin, the crushed ore is run through the mill for recovery of the gold.

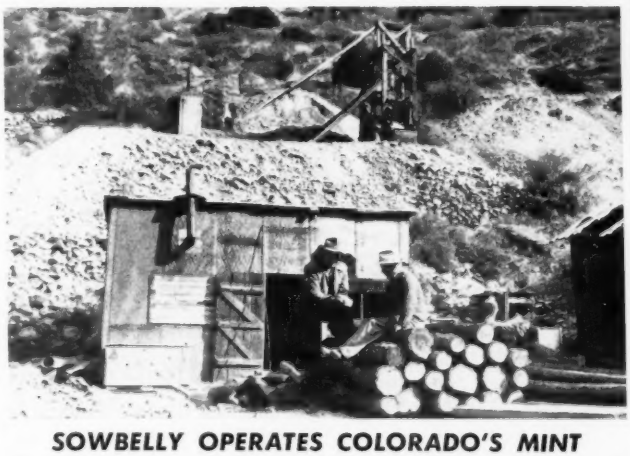
One hundred and twenty acres of land on Mineral hill, northwest of Cripple Creek, Colorado, were recently purchased by the *Cripple Creek Mining and Milling Company*. Placer operations will begin shortly, according to an announcement by Mining Superintendent Vick Porter. Five test holes have been drilled on the property, ranging in depth from 16' to 40', with the 40' hole showing good values. The dry land placer dredge, which will have a 60-yards-an-hour capacity, should be completed and ready for operation shortly. It is being constructed by the Mechanics Service Company of Cripple Creek, and the Universal Dredge Company of Denver.

Since production started at *Gold Mines Consolidated's Donderberg-Terrible-Mendota* group, 101 shipments of concentrates have been made. A recent shipment netted more than $1,300 for 36 tons of crude ore. The *Frostberg* shaft opening has just been completed, also mill changes which will make possible selective concentrates. With the opening of the Frostberg shaft, the company hopes to double past production.

Operations at the *Small Spot Mining Company*, in the Calamity uranium district near Gateway, Colorado, are being enlarged by the owner - operators, Fred Sturm and Floyd Ruby. Besides continuing operation of the Small Spot mine, Ruby and Sturm recently leased a group of eight carnotite claims on Blue Creek, 14 miles up the river from their present operations, and plan to center their operations on these claims. Bunkhouses and equipment have been moved from the Small Spot mine to the new location and operations are under way. For the past several months, the Small Spot Mining Company has been one of the largest producers of uranium-vanadium ore in the Colorado Plateau area, and in its new location it is expected that production will be increased to 100 or 150 tons daily.

Progress is being made at the *Incas* mines, owned by the *Incas Mines, Inc.*, and located in the La Plata mountain and San Juan areas. The upper workings, which were stoped to the surface, have shown considerable profit, and equally good ore in the lower workings, with several times the amount of stoping ground, is anticipated. Bert Thompson, vice-president and general manager, is devoting his entire time to the Incas and has moved his pack train from the *Bessie G* mine to the Incas, where he hopes to be able to work through the winter. The Incas Mines, Inc., is owned by Mr. Burris, Bert Thompson, Mrs. William Barber and Thomas H. Barber. A minority interest is held by a small group of Pueblo and Durango residents.

Installation of the new Nordberg hoist at the *Cresson* mine, Cripple Creek, has been completed and the unit is now in operation servicing timber repair work on the lower sta-



SOWBELLY OPERATES COLORADO'S MINT

The well-known old Mint gold mine at Empire, Colorado, is now being leased and developed in the upper workings by the Sowbelly Mining and Development Company. The above photograph shows Howard Cook, president and general manager of Sowbelly, and Henry Nelson, owner of the Mint. Machinery has been installed and exploration will determine the scope of future operations.

tions. Other recent improvements at the mine have been conversion of the old steam plant into a machine shop and installation of a 100' conveyor connecting the mine ore bins with the truck loading bins. New steel ore bins are to be installed at the new mill.

SOUTH DAKOTA

Shortage and high cost of underground labor plus cost of materials compared with the price of gold continued to be the principal factors in limiting South Dakota gold output during 1948. The *Homestake* mine at Lead, with productive capacity exceeding that of any other gold producing mine in the United States, operated at about two-thirds capacity during 1948. Also an important gold producer, the *Bald Mountain* mine at Trojan, operated at less than capacity. Total state output was 7 percent less than in 1947.

UTAH

To increase its supply of uranium and vanadium ores, the *United States Vanadium Corporation* is installing a crushing and sampling station at Thompson, Utah, for the purchase of ore produced in the Green River, Thompson, Moab, Yellow Cat and other mining districts of that section. Present plans indicate the plant will be opened as a buying station for shipment to the *Rifle* plant for processing. The company's Rifle plant is operating at full capacity and the reactivated and remodeled *Uravan* plant is expected to commence operations around the first of the year. The Thompson station is expected to relieve the long haul of ore being trucked from eastern Utah to Rifle.

The *East Utah Mining Company*, an affiliate of *Newmont Mining Company*, recently acquired 50,000 shares of *New Park Mining Company*, which operates in the Park City district. It is reported that operations will be resumed at once in the *General Connor Mining Company* ground adjacent to East Utah ground. This is a joint venture of New Park and Newmont.

Manganese ore, taken from two Utah mines, has proved to be easily amenable to concentration, according to a U. S. Bureau of Mines report. Samplings were from *Payday No. 1 Mine* and the *Newcomb Mine* in Weber and Rich Counties.

The first uranium and vanadium content ore to be shipped from the Uintah Basin was taken from claims located about 12 miles south of Myton and owned by Lee Cooper and Charles Sands. The Rifle, Colorado, plant will receive the reportedly high-grade ore.

A 100-ton uranium ore milling plant near Moab, Utah, will soon be in operation, according to the president of *Green River Exploration Company*, A. E. Williams. The *Utah Uranium Mining and Reduction Company* is being organized to acquire interests in uranium claims near the Utah-Colorado line and to bring many independent uranium miners and prospectors into the organization. Cost of the milling plant is being estimated at approximately $500,000.

Installation of electrical pumping and hoisting equipment at mineral properties controlled by the *American Consolidated Mines*, and located in American Fork Canyon, is being planned in order to permit more efficient exploration of possible orebodies believed to exist at levels below those formerly productive. A winze is presently being projected from the No. 3 tunnel in an effort to reach a point estimated to be 100' below the tunnel level where three veins are expected to intersect.

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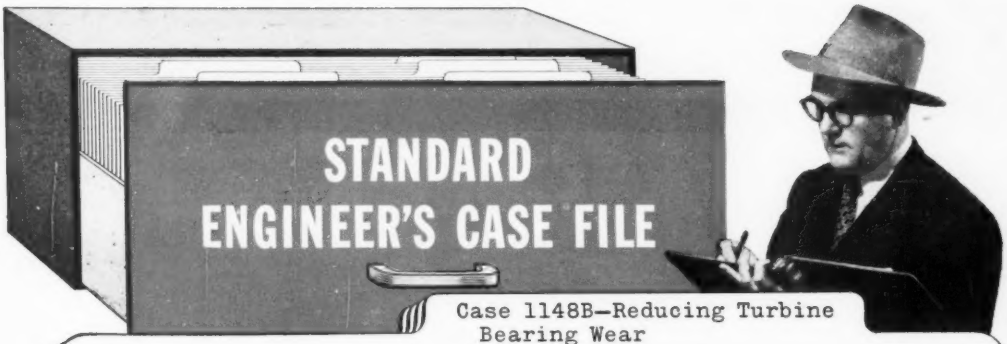
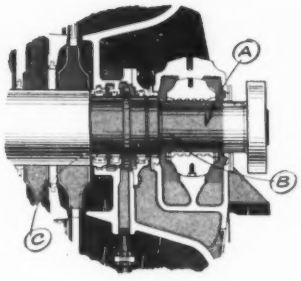


Case 1148B—Reducing Turbine Bearing Wear



TURBINE BEARING

There was no sign of acidity or deterioration in Calol OC Turbine Oil when, after six years use in a heavily-loaded turbine, a sample was given a laboratory analysis. Bearings and other parts showed practically no wear and the entire lubrication system was clean and functioning with maximum efficiency. Recommended for all steam turbine lubrication and as the medium in hydraulic units. Comes in four grades: 9, 11, 15, 19.

A. Has excellent metal-wetting ability — resists the heaviest bearing and gear loads and assures constant lubrication.

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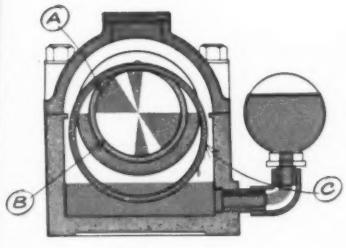
C. Corrosion inhibitor stops rusting — Calol OC Turbine Oil in both salt and fresh water tests kept steel strips from rusting while they were immersed in the water-oil mixtures for 48 hours.

Case 1163—Cutting General Bearing Maintenance Costs



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Dresser Industries Will Acquire Magnet Cove

Dresser Industries, Inc., Cleveland, Ohio, will purchase the common stock of the Magnet Cove Barium Corporation of Houston, Texas, for approximately $2,800,000 in cash, plus about 17,500 shares of Dresser common stock, it was recently announced by Dresser Industries' president, H. N. Mallon.

Magnet Cove's major products are mineral and chemical compounds used in preparation of drilling mud. In rotary drilling the compound is used to cool the drill bit, remove cuttings and to control high formation pressures.

Magnet Cove Barium Corporation utilizes its barite deposits at Malvern, Arkansas.

Ore Shipments End Early As Steel Strike Result

In Michigan, as in Minnesota, mining men early in October became resigned to the fact that ore shipping was over for the season unless the steel and coal strikes were settled soon. Supervisory employees continued a 24-hour guard at underground pumps, at engine houses, offices, and other mine buildings. George W. Callahan, manager of the marine department of Pickands Mather & Company, states that 21 of the company's 36 ore vessels were tied up, and crews laid off. The M. A. Hanna Company vessels were also tied up with only ship keepers left on board.

The Inland Steel Company used full page advertisements in Michigan papers to present the company's views as to the strike. One addressed to Sherwood Mine employees is as follows: "Why is the Sherwood Mine Not Operating? Did not the men at the Sherwood vote not to strike? And was not the vote fairly, honestly conducted by the Labor Mediation Board of the State of Michigan? Do you not believe that these men have the right to decide for themselves whether they wish to support your program by strike? Is that not the way of democracy in which your union leaders claim to believe so ardently? You are violating the law in preventing Sherwood men from working. You are doing this by picketing the mine gates, and by threatening violence to men who want to work, and to their families and property. Nobody is interfering with the right to strike of those men and those locals which want to strike. Neither should anybody interfere with the right to work of those who want to work. You say you believe in democracy. Then practice it. Let the Sherwood men work. P. D. Pearson, Superintendent, Menominee Range Operations."

Foote Mineral Company To Open Research Plant

Having bought a three-story school building at Berwyn, Pennsylvania, Foote Mineral Company of Germantown plans to convert it into a scientific research and development laboratory.

Among the products manufactured by the company are lithium, tungsten and strontium chemicals; alloys and metals and refined ores.

Laboratories, shop facilities and special equipment will be set up to develop and improve present products and markets for metals and alloys, chemicals, ceramic glazes and other related manufactures. Attention will also be given to engineering studies for improving of existing equipment designs and process controls.

The company's Research and Development Department will be moved into the new quarters by the end of the year. Dr. S. C. Ogburn, Jr., is manager and director of the department as well as a company director.

A S & R in Texas Building Highest Smokestack

The El Paso Smelting Works of the American Smelting and Refining Company has awarded a contract for a smokestack 610' high, which will be the tallest known in the world.

E. McL. Tittmann, manager, said the stack would be 300' higher than necessary to meet operating requirements, but that the extra height would provide better smoke dispersion.

The stack will replace a smaller one now operating and will provide extra capacity for increased operations in the future. The foundation and column will take 6,480 tons of concrete and 152 tons of steel. The base will measure 44', and the column walls will taper from a thickness of 4' at the bottom to 9" at the top, with a diameter there of 14'.

The entire job is expected to be completed October 31, 1950.

JACK PIERCE, secretary of the New Mexico Miners and Prospectors Association, invites all mining men to attend the annual meeting of the Association at Silver City, New Mexico, on January 19-21.

All physical properties of *Kansas Exploration Inc.* have been acquired by George W. Potter of Joplin, former vice-president of *Eagle-Pitcher M. & S. Co.*, according to reports early in October. The transaction is said to involve the company's two large mills in Missouri and Oklahoma and an estimated 600 acres of mining land, all of which have been inactive for some time. Mr. Potter retired from Eagle-Picher five years ago. Plans for operating the properties are regarded as contingent upon improved metal prices.

National Steel Corporation is installing a single unit conveyor 10,900 feet long, 30 feet wide, at its *Weirton Mine* near Morgantown, West Virginia. The conveyor is in a recently completed tunnel connecting the surface plant of the mine with its docks on the Monogahela River and driven through an intervening hill 400 feet high. Production at the mine is expected to begin early in 1950 and will ultimately reach 6,000 tons per day.

The *Pan-American Engineering Company* has sold to the *Dorr Co.* its rights to the metallurgical jigs and sewage aerators it has been manufacturing. The Dorr Co. takes over the design, manufacture, and distribution of the equipment. Mr. W. G. Moore, who was design engineer for Pan-American, has joined the staff of the Dorr Co.

Jones & Laughlin Ore Company's Benson Mine at Star Lake, New York, won first place in the Mines, Quarries and Wells group in the 1949 N. Y. State Insurance Fund Accident

Prevention contest. Fifteen firms competed in the contest which covered the six months period from January 1st to June 30, 1949.

Advices in mid-October from Philadelphia stated that exploratory operations were continuing on radioactive ore showings uncovered recently in lower Berks County, about 40 miles from the city. Center of the operations are reported to be at the Trunk farm near Morgantown not far from the eastern extension of the Pennsylvania Turnpike.

Reynolds Metals Co. late in October announced an $8 million expansion in its Alabama operations, expected to increase its number of employees in the Listerhill area by several thousand men. The work, embracing installation of new foil mills, annealing ovens and other high-speed aluminum processing units, is on a stepped-up schedule for completion by January 1.

IRON RANGES

Silica slag piles left where Michigan's charcoal iron furnace once operated have become of minor value recently because of the increasing market for insulating and sound proofing materials. Mining of these piles is under way in the iron regions of Michigan, and the slag is being adapted to the manufacture of rock wool and spun glass. As silica slag has a lower melting point than silica sand, insulating manufacturers find their costs are materially cut by using slag.

Oliver Iron Mining Company's erection of a new ore washing plant at its Gross-Marble open pit property at Marble, Minn., is reported progressing satisfactorily. The company is also completing installation of a Bucyrus-Erie walking dragline which will be used in future stripping operations on the property.

Late October reports advise that diamond drilling has been resumed on the Magoffin state lease owned by the *Glen Development Co.* in Aitkin County, Minn. Located 12 miles south of the center of most of the activity on the Cayuna range, the property has been the subject of considerable interest in view of showing of pyrite and pyrrhotite minerals.

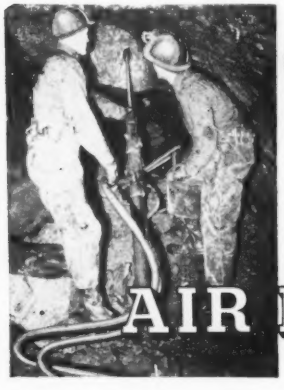
A fleet of trucks and shovels, including a newly assembled 6-yard diesel powered Lima shovel, operated by the S. J. Groves & Sons contracting firm, are currently engaged in a stripping project for the *Cayuna Ore Co.* at the original Mahnomen pit on the Cayuna range. The project will not be completed until 1950.

Sinking of the Mather "B" shaft of the *Negaunee Mine Co.* at Negaunee, Mich., which has been underway since 1947, has been completed. The vertical shaft, reaching to a depth of 3,080', will be connected with the Mather "A" shaft 8,000' distant, both openings providing outlet tor iron ore from the Mather mine. The Negaunee operation is owned jointly by *Bethlehem* and *Cleveland-Cliffs.*

Work is progressing steadily on the stripping project underway at *Stanley Mining Company's Mary Ellen* property near Biwabik. The job is under contract to Peter Kiewit Sons Co.

As in previous years, the *Inter-State Iron Company's Hill-Annex Mine* at Calumet is the number one shipper from state fee owned properties. *Pickands Mather & Company's Scranton* mine at Hibbing is number two, and *M. A. Hanna's Kevin* mine at Cooley number three. The Hill-Annex mine took over the lead from the *Missabe Mountain* at Virginia. In total shipments the Missabe Mountain is still far ahead of the field with about 72,000,000 tons as compared to approximately 58,000,000 tons from the Hill-Annex. The Oliver's *Leonidas* at Eveleth is number three in total shipments, followed by the Scranton, Kevin, and *Minnewas.*

The 1150 B. Bucyrus-Erie dragline



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HEAVY-MEDIA PLANT STARTS

Inter-State Iron Company's Grant Mine near Buhl, Minnesota, got its new Mobil-Mill into commercial production early in August after man and nature had combined to postpone its scheduled June start. Lightning destroyed a large transformer at the property and inability to obtain a replacement eliminated all chance of operation. The Western Machinery Company-built semi-portable heavy-media circuit has a 10' Wemco Cone Separator with internal air lift designed to handle 125 T/H of plus $\frac{1}{8}$" retreat type iron ore from the Grant mine or adjacent stockpiles which accumulated during earlier operation. The new unit will in no way affect the present Grant washing plant, but provision has been made to draw the HMS plant fine reject to the classifier circuit for testing. No provision for handling minus $\frac{1}{8}$" material has been made in the new circuit. The plant uses a ferrosilicon medium which is cleaned and reclaimed by wet magnetic separation. The ore handling plant, with the exception of the Kue-Ken jaw crusher, is of Pioneering Engineering Works manufacture and includes crushing rolls, screens and pre-fabricated conveyor trusses with Robins idlers. All plant erection was handled by an Inter-State crew under the supervision of Russell Le Doux, superintendent of J & L beneficiation plants in the area.

working at the *South Agnew* mine in September moved 536,514 cubic yards. A total of 135,723 tons of ore were shipped from the property by 120 B and 170 B standard shovels.

The *Inter-State Iron Company's Longyear* mine at Hibbing, of which John F. Linden is superintendent, has been awarded the Admiral's Safety Award. On August 15, 1949, it completed one year without a lost time accident.

Development work at the *Jones & Laughlin Ore Company's Vicar* mine at Wakefield has increased the pumping load from 740 G.P.M. to over 1,300 G.P.M. Work is underway for a conveyor from the shaft to the stock-pile ground. A contract has been let to the Koshak Bros. of Park Falls, Wisconsin, to construct $2\frac{1}{2}$ miles of railroad from south of the Manley Siding on the C. & N. W. Railway to the mine. Work was first begun on August 21.

Total iron ore shipments from the mines of Lake Superior area for 1948 show the *Oliver Iron Mining Company* in its customary first place with *Pickands Mather & Company* second as usual. *The M. A. Hanna Company*, however, (including *Butler Bros.*) passed the *C. C. I. Company* to take over third place. *Inter-State Iron Company*, *Republic Steel Corporation*, and *Oglebay, Norton & Company* occupied fifth, sixth and seventh places. *E. W. Coons Company*, *Stanley Mining Company*, and *Pacific Isle Mining Company* were close contenders for sixteenth, seventeenth, and eighteenth places with about 3,500 tons difference between sixteen and eighteen. The Mesabi range forwarded 64,046,677 tons of the 84,693,010 total or more than 75 percent.

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New 100-Ton Mill Planned By Idaho Company

In the old Leadville and Kimmel mines at Leadore, Idaho, East Lemhi Mining Company has found enough milling grade ore to warrant the building of a 100-ton mill, according to J. F. Arnold, secretary-treasurer.

The galena vein found in the newly opened upper Kimmel tunnel has widened considerably with drifting. New track has been laid in this tunnel and a compressor installed.

What is thought to be an extension of the old Leadville silver vein was discovered by surface bulldozing. Altogether about 700,000 tons of commercial ore is said to be available for mining.

Montana Uranium Finds Under Investigation

Elkhorn Mining Company's leased group of lode mining claims, called the Free Enterprise group at Boulder, Montana, were discovered to be radio-active several months ago and as a result attention is being focused on the company's development plans.

The first showings were found by Wade V. Lewis, president, Sandford F. Davis and Edward C. Miles. A four-foot vein 475' long gave definite Geiger counter reactions on the surface, as did the shaft in the old workings. Sunshine Mining Company became interested and now has an operational agreement with Elkhorn. Under the direction of Rowland King, Sunshine is engaged in retimbering and sinking the shaft and crosscutting. Machinery is rapidly being installed.

Meanwhile exploration is beginning at Elkhorn's Clancy creek leases for possible uranium deposits.

Three miles north of Basin, Montana, uranium was reported in the Comstock group of claims under development by lessees Waldemar Sandquist, George Meyer and Paul Williams.

Pitchblende Found by Sunshine in Idaho

Small amounts of pitchblende mineralization have been discovered on the 3,100' and 3,700' levels of Sunshine Mining Company's silver property at Kellogg, Idaho. Ross D. Leisk, general manager, recently issued this statement and added that with only several small veins and stringers found, in which mineralization is microscopically fine, the strike is of too low grade to be developed economically except during war conditions.

For several months Sunshine has carried on investigations of the uranium possibilities of the property through the efforts of Raymond F. Robinson, chief geologist, with whom the Atomic Energy Commission and the U. S. Bureau of Mines at Albany, Oregon, co-operated.

Ernest Thurlow, AEC geologist, is now checking other nearby properties to determine the extent of uranium mineralization in the area.

An 800-ton concentrator is being constructed by the *Calera Mining Company* at its *Blackbird* mine, Forney, Idaho. Housing is also being built on land recently acquired adjacent to the mine in order to take care of the increase to 300 of employees who will be needed in the mine and mill when the concentrator is finished. Several thousand dollars is also being spent to bring electric power to the property from a distance of 50 miles. The company has on its land one of the largest deposits of cobalt in the country.

Whitedelf Mining and Development Company, Clark Fork, Idaho, will deepen its main shaft another 600' to reach the 1050' level, according to Compton I. White, secretary. The E. J. Lonyear Company of Minneapolis has submitted a bid for the work which will take about seven months to complete using equipment now on hand on Whitedelf's property. The company is presently engaged in driving on silver-lead ore discovered several years ago during a Bureau of Mines diamond drilling program in the area. Ore from stopes above the 400' level is being milled and shipped.

Geological crews employed by the *U. S. Atomic Energy Commission* have been investigating several Idaho properties recently since the discovery of radioactivety ores in *Sunshine Mining Company's* workings. Included in the properties being surveyed are the *Liberty Bell*, northeast of Kellogg, the *Highland Surprise*, in the Pine Creek area, *Coeur d'Alene Mines Corporation*, Osburn, and *Rare Earths, Inc.* Burgdorf, which has been developing monazite sands in old placer workings. None of the reactions found or samples assayed have been of commercial value so far.

Lucky Friday Silver Lead Mines Company, Mullen, Idaho, in drifting on the 1,600' level, recently hit three blind veins, one lying 92', one 238' and the last, 252' from the shaft. The veins average from 6 to 10' wide, and their pitch indicates they may connect with the main vein 200' below on the 1,800' level. The ore has reportedly averaged good values. About 50' of further drifting is planned on the 1,600 to check possibilities of other blind veins.

Sidney Mining Company, Kellogg, Idaho, is waiting out the strike at Bunker Hill and Sullivan's smelter by continuing to block out additional ore and by keeping mine and plant ready for operation immediately after notice of the strike's end. About 20 men are engaged in the development work.

Idaho Goldfields, Inc., has obtained a lease on a gold property, unworked for 50 years, located between Kellogg and Coeur d'Alene, Idaho. W. M. Fredericks, member of the company's board, said the property consists of an incline shaft and several tunnels. Free gold exists in the upper workings. The company expects to bulldoze overburden and underbrush, open a lower tunnel site and install a roasting and amalgamating plant. Other gold deposits controlled by the company lie between White Bird and Lucile along the Salmon River.

A Nevada corporation, *Victory Divide Mining Company*, has announced plans to buy and develop several properties in Idaho, Montana, and Nevada. Dean C. White, vice president, said that among the properties on which the company has options are the *Red Bird*, west of Clayton, Idaho, the *Nine Mile* claims, north of Wallace, Idaho, and the *Galena King*, southwest of Elko, Nevada. In addition an agreement has been made between Victory and *Crystal Springs Mining Company*, Lane, Idaho, to develop its mine and share the profits. Diamond drilling on the *Buffalo Mines* group of 28 claims located 12 miles south of Saltese, Montana, is also on the agenda. The Red Bird has been operating for two years and is shipping about 500 tons of lead-silver ore per month to Salt Lake City. Close to 100,000 tons of ore has been blocked out and further development includes the building of a 100-ton flotation mill. The Crystal Springs program includes building repairs and diamond drilling to explore veins showing in surface workings, from which considerable ore has been

taken in the past. The Nine Mile Company, which has six patented and 17 unpatented claims and is developed by six tunnels and a total of 6,050′ of workings, has about enough equipment and buildings already on its property for initial work.

Mill tests on gold-silver-lead ore from the *U. S. Grant Mining Company's* property near Virginia City, Montana, have been completed, and development ore from the *Grant* mine is being shipped regularly. L. L. McLean, director, also anounced that surveying and clearing title to the 300-ton mill site between the Grant and *Easton-Pacific* workings was being done.

Since *Swansea Mines'* mill burned down several months ago, the company announced through C. L. Hewitt, manager, that a new millsite has been chosen which will eliminate a steep hill, make pumping water to the mill unnecessary and avoid bad snow conditions. In the mine a new adit is being driven 500′ below former workings and 1,700′ long. It should cut two new veins at the 700 and 800′ depths and another vein, the Silver Bell, at 1,000′. The property is located at Lincoln, Montana.

Al-Con Mining and Engineering Company has built a new $2,000 road into a newly acquired property in Peterson gulch, Madison County, Montana, once belonging to the Elling Estates Company. M. R. Massey, head engineer for Al-Con says the company has been opening and testing numerous mines in the area the past few years.

Mining of asbestos is about to begin by *Interstate Products Company* in Gallatin Canyon, south of Bozeman, Montana. The claims were located by Pete Karst many years ago. C. W. Lester, head of Interstate, will supervise operations.

Lead - gold - silver samples from *Nancy Lee Mines' King and Queen* mine continue to show good values. The mine is just west of Superior, Montana. An old tunnel, some 125′ down the slope from the current workings, is being opened. A 300′ extension of this tunnel is expected to put the heading under the ore being developed above. According to E. G. Smith, leaser and operator, machinery has been moved in for work on the tunnel.

Using an 800 gallon per minute Pomona deep-well pump and a 300 gallon centrifugal pump, unwatering of the *Cumberland* mine, near White Sulphur Springs, Montana, by *Silverton Mining Company,* is continuing successfully. The lead-silver orebody is a lenticular replacement in lime averaging around 40 to 50′ wide, and 100′ long. The mine is believed to contain a large amount of lead sulphide which could not be recovered in old smelters built to treat carbonate ore.

Considerable development work is progressing at three old Montana properties under the direction of I. G. Irving and associates. Shipments are going out from the *Spar* mine, a silver producer 17 miles west of Toston, and the 250′ shaft is being sunk further on ore. A shaft sinking program at the *Pyrenees* mine, Georgetown, has been finished and a crosscut started to cut a gold vein beneath the old workings. At the *Norwich* mine, Irving advised that the Bureau of Mines is diamond drilling to estimate the extent of pink manganese ore reserves. The Norwich which is located near Butte, produced a fair amount of manganese during the war from the 165′ depth.

A 600′ suspension bridge is being built at the mouth of Rainy Creek across the Kootenay River by *Universal Zonolite Company*, Libby, Montana. The bridge will carry a 20′ conveyor belt to a loading station on the Great Northern tracts. The firm has two vermiculite properties on top of a mountain and in 1929 had planned to build a tramway down the mountain and the bridge now under way, but had to put off the project because of the financial crash.

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Near Greenhorn, Grant County, Oregon, Andrew Murray and his associates will begin a testing program on a potential dredge placer as soon as winter ends. Testing which has already been done proved encouraging enough for further evaluation of the property.

Milling operations have begun at the *Gold Plate* mine, Galice, Josephine County, Oregon. The mill, a 4-stamp one, was recently installed by the owners, W. W. Phillips and Charles Skeeters.

Porter and Company will continue dredging operations at Olive Creek, Grant County, Oregon, according to reports. However, next season the company expects to move the dredge to Crane Creek.

The *Grandview* mine and the *Thomason* mine near Unity, Baker County, Oregon, are to be eventually consolidated, according to plans Kenneth Grabner and Ralph Leonhardy are working out. Grabner owns the Grandview and Leonhardy the Thomason, which has only been opened a year or so. A small mill was recently built on the property.

Operations have ceased for the winter at Anthony Brandenthaler's placer ground in the Virtue Flat area of Baker County, Oregon. Installation of a larger pump is planned for increased operations in the next season. Four or five men were employed for the recent operations. Sluicing was done with water pumps from the Virtue mine, now closed. Brandenthaler reports a good recovery.

Further exploration is reported at the *Bratcher* tungsten mine, Ashland, Oregon, where operators are searching for additional mineralized areas. The lateral extent of the ore is also being explored.

The $2,000,000 plant at Vancouver, Washington, built by *The Carborundum Company* is about to start operating to produce silicon carbide in as yet undisclosed amounts. The plant is located on a 99 acre tract and consists of 17 buildings with furnaces and crushers and will supply employment for about 50 men. Silica sand will be supplied from Spokane, coke and salt from California and sawdust from Vancouver. The finished materials will mainly be sent East, John L. Bergman, plant superintendent, advised.

Prediction for the opening of *Pend Oreille Mines and Metals Company's* new mill at Metaline Falls, Washington, is now July 1, 1950. Two 800 ton units have been added to the original 700 ton mill. Concrete work on the inclined shaft is now beyond the 1,600′ point with the incline between 16 and 18 degrees. The 16,000 tons monthly production ore will be greatly increased when the mill begins operating. Installation of a new turbine and generator to generate over 4,000 kilowatts is planned.

The *Sullivan Mining Company* and the *Metaline and Pine Creek Company* have filed on several more claims in the "Z" canyon area of the Metaline district, Washington. Sullivan added a total of 34 and Metaline a total of four. The latter firm is controlled by Sullivan.

One of six potlines has been closed at *Permanente Metals Company's Mead* aluminum reduction plant near Spokane, Washington, as a result of the present power shortage in the northwest.

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Winnemucca Mine Will Install 50-Ton Mill

With a new electric plant, new buildings, ore cars, bins, a compressed air locomotive and rock crusher among equipment acquired in the past year and put into operation, Winnemucca Mountain Mines at Winnemucca, Nevada, plans next spring to add a 50-ton plant with a ball mill and cyanide units. A 5 to 10 ton pilot mill is already operating.

Gus Rogers, manager, reports that reconditioning of the Rexall gold mine is being done in preparation for its connection with the main Winnemucca tunnel, now 1,800′ long. Another 600′ will have to be driven before Rexall ground is reached where 40,000 tons of developed ore is estimated to exist. Next year deeper development of the Winnemucca property is scheduled. The main recovery from the mine is gold, but considerable silver and some copper is also extracted.

Exploration of Arizona Manganese Continues

Exploration of the Artillery Peak manganese deposit in southern Mohave County, Arizona, is being undertaken by United States Bureau of Mines as a part of its program to develop a domestic supply of manganese. The work will be supervised by Charles A. Kumke, mining engineer with the Bureau at Tucson, Arizona, assisted by Lincoln A. Stewart, mining engineer. A small camp is being established near the location of the initial work and will be serviced by a road from Wenden. Preliminary plans call for the driving of two tunnels in an effort to develop some of the higher-grade manganese indicated by previous exploration.

The Artillery Peak deposit is controlled by the M. A. Hanna Company of Cleveland, Ohio. During the earlier part of the war minerals investigations, the Bureau of Mines completed about 3,000′ of diamond drilling at the Artillery Peak deposit and conducted some experimental mining. Approximately 2,510 tons of ore was trucked to the Bureau's pilot plant at Boulder City, Nevada, for testing.

Kaiser Blows in a New Blast Furnace

A second blast furnace was blown in recently by Kaiser Steel Corporation at its steel plant at Fontana, California, increasing the plant's pig iron capacity to 2,400 tons a day.

The furnace, called the Bess No. 2, was completed in 10 months and represents $17,000,000 in private capital. Several refinements, resulting from the study of the six years' operation of Bess No. 1, have been made in the new furnace, and include the lowering from 115′ to 100′ of the height of the three stoves in which the air blast is pre-heated to 1,600 degrees before entering the furnace. As Fontana iron ore has less slag than most, a reduction in the length of the slag pits by 100′ was possible.

Also constructed were 45 Koppers-Becker by-product coke ovens, which, combined with the existing 95 ovens, give Fontana an annual capacity of 515,000 net tons of coke.

Materials used in the construction of the furnace and stoves include 4,500 tons of structural steel, 13,500 cu. yds. of concrete foundations, 650 tons of reinforcing steel over 2,000,000 refractory bricks and 5,000 linear feet of conveyor belting to expedite handling of materials.

Darrell V. Cole and associates are investigating Arizona placer deposits, searching for a location where their idle dredging equipment can be used to advantage. Cole has operated extensively in the Randsburg, California, district, and he and his associates have $100,000 worth of dredging and gold recovery equipment which they would like to put to work on a gold placer property. They are seeking a location with a minimum of 50 cents per cubic yard in recoverable free gold. Cole also is in the market for untreated placer gold and states he will pay $37 an ounce for 1,000 fine product, taking anything from 30 to 100,000 ounces. His address is Box 859, Wickenburg, Arizona.

W. C. KINNON recently was promoted from branch manager to district manager of Allis-Chalmers Manufacturing Company's district office at Phoenix, Arizona. Kinnon was special mining representative in Italy, Yugoslavia and France and, in 1943, was appointed to the Phoenix branch.

The *Hillside Mining and Milling Company*, Hillside, Arizona, has installed a blower on the 1,000′ level, and is repairing raises from the 700 to 400′ levels. When completed, ventilation and cooling of the 1,000′ and 900′ levels will be greatly improved. Production at the Hillside is running at the rate of 1,500 tons monthly of lead, zinc, silver and copper ore, an increase from the 1,200 tons in May and 1,000 tons a year ago. Forty-six men are employed on a two-shift basis. E. R. Dickie, Bagdad, is manager.

The *Western Perlite Corporation*, Phoenix, Arizona, has purchased the perlite processing facilities of the Perlite Corporation, also of Phoenix. According to an announcement by E. E. Swift, some of the acquired equipment will be combined with Western Perlite operations to increase volume production of concrete and plaster aggregate. In addition, several new furnaces have been purchased for use in the firm's plant.

An inclined shaft, now down over 35′, is being sunk by the *Arizona Consolidated Gold and Copper Mines* at the *Compadre* mine in the Tyndall district of Arizona, and a small tonnage of lead-zinc ore is produced from this development work. Nine men are employed at the Compadre, which is owned by John Kramer of Nogales, Arizona, and is worked under lease agreement by the Arizona Consolidated. John F. Johnson is president and manager of the company.

The *Athletic Mining and Smelting Company*, Safford, Arizona, is employing two shifts at its *Head Center* mine and one at the *Grand Central* mine, where shaft sinking is in progress. Production is averaging 1,300 tons monthly. H. L. Horton is manager.

The *Goodwin Mining Company* is shipping about 500 tons of silver-lead-zinc-copper ore monthly from its *Copper King* mine in the Eureka district, Arizona. The ore is stoped from the 350′ level. A similar tonnage is being mined from the *Old Dick* group of claims. Production from both properties goes to the Hillside Mining and Milling Company for treatment. E. G. Green, Bagdad, is manager of both properties.

A three-year lease with an option to buy has been obtained by *Verde Exploration Company* over 20 unpatented and 57 patented claims at Jerome, Arizona. The claims extend about three by seven miles over an area north of Phelps Dodge's Copper Chief mine. Included in the claims

are the Gadsen, Verde Hub, Hooker and Ewing groups.

The *Fiber King* group of asbestos claims on the White River Indian Reservation has been reopened by Charles Ireland, lessee, of Globe, Arizona. Five men are employed in the work and production is averaging 35 tons monthly. Otto Malone of Globe is superintendent.

Currently, *Inspiration Consolidated Copper Company*, Inspiration, Arizona, is producing approximately 257,000 tons of ore monthly, compared with an output in excess of 350,000 tons monthly a year ago. This output is in line with the company's announcement of last summer that production would be cut by 20 to 25 per cent following the break in the copper market and lessened demand. A similar reduction in number of mine employees also has taken place, and Inspiration is now employing only 305 men, compared to a crew of 475 a year ago. P. D. I. Honeyman is general manager of the company.

Shattuck - Denn Corporation, Bisbee, Arizona, closed its concentrating plant in November. J. A. Wilcox, superintendent, said that mines which have been sending ore to the mill for custom milling were notified to make no more shipments, and that the plant shut down as soon as the ore on hand and in transit was milled. The combination of the drop in prices for lead and zinc and increased foreign shipments is said to be responsible for the decision to close the mill. Wilcox explained that since the break in the metal market, many mines which previously had supplied the mill have been forced to suspend operations.

The *Ash Peak Mines, Inc.*, Duncan, Arizona, is maintaining its production of siliceous silver ore at the rate of 1,800 tons monthly. Shipments go to the International Smelting and Refining Company at Miami. Recently a winze was sunk from the 500' level to the 600' level. Twenty-one men are employed on a two-shift schedule. Howard Mottier, Box 208, Duncan, is lessee of the mine and in direct charge of the work.

An increase in the estimated total of manganese ore reserves at the *Timmons* property near Crescent Mills, Plumas County, California, is announced due to additional development work in the past several months. The company is shipping ore to the Geneva steel plant at Provo, Utah, which is reported to be taking ore running as low as 25 percent manganese to meet its demands. Other companies in the Crescent Mills area are exploring and developing iron and manganese deposits, considerably expanding the potentialities of the district.

The old *Lucky S.* gold mine is being reopened by the *Wiser-Hughes Development Company*, a new organization headed by Ray B. Wiser and Alden E. Hughes. The mine is 15 miles northeast of Taylorsville, Plumas County, California. To get into production, an estimated $50,000 will be spent, providing for a new road to be built from Taylorsville, a sawmill, a main tunnel with side drifts and equipment and machinery. The men hope to be operating by July 1.

Pacific Portland Cement Company's gypsum products plant at Redwood City, California, has been bought by the *Kaiser Industries, Inc.*, and will be operated by its division, *Kaiser Gypsum*. Raw gypsum to be sent to the plant for processing will come from the company's San Marcos Island quarry off southern California's coast.

Increasing activity is seen in placer mining on the Middle Fork of the Yuba River near Nevada City, California. The *Plumbago*, *Gaston*, and *You Bet* placers are among the mines reopened. New equipment has been installed at the Plumbago and a large operation will eventually be under way on the You Bet. Other properties on Canyon Creek near Washington are also producing, some of them after more than 50 years of inactivity.

Gold Hill Dredging Company has resumed development of the McCrea-Townsend group of lead-silver claims in Death Valley, California. Large orebodies are said to exist in the claims, which will be put into operation at an estimated cost of $20,000. Water from Cottonwood Canyon Creek has been applied for. Besides this project the company is dredging three sections of land in the Klamath River placer field and near the Scott River Canyon.

Recent rebuilding of 30 odd miles from Ubehebe Crater to Tin Mountain, California, has enabled *Huntley Industrial Minerals Company* to start shipments of asbestos from its mine to its plant at Bishop. The reconditioned road will also help open up several other properties in the area.

A group of Denver, Colorado, men headed by Floyd Wilson are reopening the *California Liberty* gold mine at Dobbins, Yuba County, California. The mine has not been operating for 22 years and, since the old 300' shaft had meantime caved in, the new management will sink another. The property consists of eight claims, is developed by several hundred feet of drifts, and has two main veins, one averaging 12' wide at the bottom of the old shaft and of low value, and the other reportedly fairly rich. Superintendent is Vern Cox.

Anaconda Copper Company's Darwin mine is back to normal production after a three-month shutdown during the summer. At Tecopa, California, expansion of the plant and additional housing improvements are

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ARIZONA COMPANY OPERATES STEADILY

Operations on a two shift basis are being maintained by the Arizona Barite Company, Mesa, Arizona, with production averaging 2,000 tons monthly. Sixteen men are employed under the direction of William F. Paine, Box 926, Mesa. Arizona Barite Company is controlled by the Houston Oilfield and Equipment Company of Houston, Texas.

being carried out and the usual crew of 60 will probably be increased to 75 with a doubling of tonnage of direct shipping ore contemplated. S. K. Droubay, manager of both the Darwin and Tecopa properties, advised that at Darwin 300 tons per day are being milled and 40 tons per day shipped direct. At Tecopa, 90 tons per day are being milled and 30 tons shipped direct.

A fluorspar vein in the Berlin area of Nye County, Nevada, is being opened up by Roy C. Ames, who first located the vein in 1941. He also reports another showing of considerable size at Ione. Some ore has already been shipped to Fallon, 100 miles from his claims.

The Pennsylvania mining district in Lincoln County, Nevada, has been known to contain good values in copper - gold - silver for numerous years, and the recent investigations of the F. L. Smith interests appear to warrant opening up this area on a far greater scope. Smith owns property about 10 miles southeast of Caliente, where he has been sinking a shaft, now down over 570', which not long ago intersected an orebody of excellent value. As a consequence, a road will undoubtedly be built into the mine from Caliente and will help to facilitate the work of other nearby small mine owners. Smith expects to install a mill and to increase operations to a point where a working force of from 30 to 50 employees will be needed.

Harry Stokely and Richard Brooks have leased the *Annie* mining claim at Vernon, Nevada, on a two - year agreement from Mrs. Josie Herrel, owner. The claim, which was staked in 1906, has a good gold producing record during its numerous years of being worked by various lessees. Stokely and Brooks expect to be ready to ship ore by the end of the year.

Production is nearly under way at the *White Eagle Mining Company's* property in Wiley Meadows, Lyon County, Nevada, after four years of development. A seven-and-a-half-mile road has been built from the mine to the nearest highway, housing provided for the crew and mining machinery and equipment moved in. Mining will be partly open-pit and partly by tunnel, and eventually a mill will be installed. Owners are Jack Sneed, S. R., J. R. and Gilbert E. Tice and Denny Copp.

At Goldfield, Nevada, Fred Searls, president of the *Newmont Mining Corporation*, advised that the *Deep Mines Operation* will be enlarged by the reopening of the White Rock No. 6 shaft which has been idle many years. After the shaft is reconditioned, sinking will be started from the present 180' depth to 500 or 600' and drifting will commence from there. Besides the shaft program, new underground development, including churn and diamond drilling, is to begin. Most of this activity will

Continued on Page 84

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NEW METHODS—NEW EQUIPMENT

Industrial Air Products Expands Plant Facilities

To better serve the states of Mississippi, Louisiana, Florida and Alabama, the Industrial Air Products Co. has recently announced the completion of an oxygen and acetylene plant in Pascagoula, Mississippi. This plant has the capacity of six million feet of oxygen and two million feet of acetylene per month, with the most modern type of machinery to produce both commercial and medical oxygen. This plant is under the direction of G. H. Jeudevine, who has been associated with the industry for a period of more than twenty years.

The home office of the Industrial Air Products Co. is in Portland, Oregon. The Pacific Northwest is served from plants in Portland and Medford, Oregon, and Spokane, Washington. Gilbert Schnitzer, general manager of the Industrial Air Products Co., states that all plants and branches carry a complete line of welding supplies and equipment, including National Welding Equipment, Meco Equipment, Sight Feed Generators, Murex Electrodes, Wilson Electrodes and other leading national lines.

Industrial Air Products Co. also announces the completion of an acetylene cylinder factory in Portland, Oregon, to serve the requirements for this new expansion program and the requirements of the industry as a whole.

A-C Names Division Dealers in West

New western Allis-Chalmers general machinery division dealers are the Northland Machinery Co., Sidney, Montana, for the company's centrifugal pumps and Texrope drive equipment in nine counties; the Strom Electric, Troy, Idaho, for motors, controls and centrifugal pumps in Latah, Nez Perce and Clearwater counties, and the Snell Refrigeration Supply Co., Dallas, Texas, for controls and centrifugal pumps in Dallas County.

Newly named Allis-Chalmers certified service shop for the company's motors, controls and transformers in Cochise County is the Copper Electric Co., Bisbee, Ariz. C. W. Morris is president and W. H. Clark in charge of service work at Copper Electric.

The Thermal Engineering Co., Salt Lake City, Utah, and Willamette Tractor Co., Albany, Oregon, have been named dealers for Allis-Chalmers centrifugal pumps. They are representing Allis-Chalmers on centrifugal pumps in Utah, in Idaho south of and including Adams, Valley and Lemhi counties, and in Baker and Malheur counties in Oregon.

Willamette Tractor is dealer for Allis-Chalmers centrifugal pumps in Linn, Marion, Benton, and Polk counties in Oregon.

Harvester Unwraps New Heavy Truck Line

At a special business press preview in Oakland on November 4 International Harvester took the wraps off its completely new line of heavy duty trucks. Including several large rugged units adapted especially to mining applications, the line consists of 87 separate truck chassis models designed to handle every conceivable type of haulage job.

The company's "West Coast" units, manufactured at International's Emeryville, Calif., plant, include two highway and four off-highway vehicles, ranging from 30,000 to 90,000 pounds, GVW. The line presents a completely new design in motor trucks, at once apparent from the massive front end to the smartly styled cab. Emphasis has been given to combining attractive appearance with improved utility, providing more roominess, added driver comfort and convenience, increased safety and all-around visibility—factors which result in greater operator efficiency and thus spell more economical truck operation. New chassis dimension engineering permits better load distribution, greater maneuverability, shorter over-all lengths and improved engine accessibility.

The power plant comprises a new valve-in-head engine, including an all-new Silver-Diamond engine.

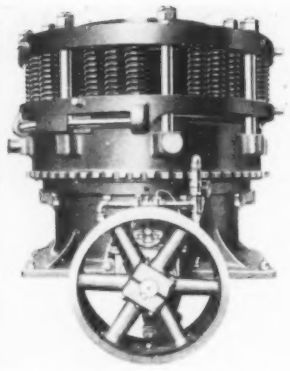
The first letter, "L," designates the new line. The company is prepared to submit complete specifications on all models on request.

Dorr Moving Headquarters To Stamford, Conn.

The Dorr Company will move its main office, presently located at 570 Lexington Ave. (the General Electric Company Building), New York, N. Y., to Stamford, Conn., in December of this year, in order to provide larger office space and better working conditions in an atmosphere less crowded than Metropolitan New York, for its main office staff of about 225 persons. The new office will be located in the Northam Warren Building on Barry Place. An office will be continued at the present New York City address, for the convenience of executives of the company, foreign and other visitors, and to accommodate a branch sales office.

LATEST ENTRY INTO HEAVY-DUTY MINE TRUCK FIELD

Many new features and improvements are incorporated in International Harvester's new Standard truck Model L-211, including better load distribution, greater maneuverability and operating economy. This model, with a gross vehicle weight rating of 34,000 pounds, is one of 87 new L-Line basic truck chassis models introduced throughout the country November 30 by the motor truck division of International Harvester Company. International Harvester's new L-Line of heavy-duty-engineered International trucks is designed to handle every conceivable type of hauling job and is the end result of International's 43 years of truck-engineering know-how.



One of the new Telsmith 48" Style FC fine crushing gyraspheres.

Two New Telsmith Gyrasphere Crushers

The Smith Engineering Works of Milwaukee, Wisconsin, has announced two new models of the Telsmith Gyrasphere Crusher — the Style S Standard Gyrasphere and the Style FC Fine Crushing Gyrasphere. They include many new improvements, incorporated after several years of testing in actual service, which give greater capacity, a more uniform, cubical product, and a lower crushing cost per ton.

In the new Style S Standard Gyrasphere, larger roller-thrust bearings are now located at the top of the eccentric and transmit crushing pressures from the bottom of the head directly into the main frame.

A longer crushing stroke gives greater capacity. The eccentric bearings have more bearing area in the upper zone of greatest crushing pressures. Longer springs are used, to pass larger pieces of tramp iron. The main drive gear is now located at the bottom of the eccentric instead of at the top, assuring more perfect and more permanent alignment of gears and longer life for these parts. The new model is more accessible for maintenance purposes. The Style S Standard Gyrasphere is available in the 24", 36" and 48" sizes, with either coarse or medium bowl.

The new Style FC Fine Crushing Gyrasphere has the same structural improvements as the Style S, plus several additional fine crushing features. It comes equipped with a new feed distributor, for even feeding and a more uniform product, and has more springs to handle greater crushing pressures. The Style FC has a different shape of mantle and concave with a longer parallel crushing zone to give a finer product. New Gun-Lock type mantle and concave holding devices are automatically self-tightening and make these parts easier to change. The Style FC Fine Crushing Gyrasphere Crusher also is available in the 24", 36" and 48" sizes, with either medium or fine bowls.

A new catalog, No. 274, describing and illustrating these two new Telsmith Gyrasphere Crushers may be secured by writing MINING WORLD, 121 Second St., San Francisco, Calif.

C-P's New Plant Has Unusual Layout

One of the most unusual manufacturing layouts in the entire country is nearing completion at the Chicago Pneumatic Tool Company's new plant in Utica, New York. The main building alone is over one-fifth of a mile long and nearly half as wide.

Faced with the problem of designing production lines for two basically different types of tools, CP engineers first laid out two six-acre sections; the west section to manufacture tools having a rotary action; the east section tools with a reciprocal action.

A horseshoe production line was then laid out for each operation, and the plant was actually built around the whole. This freedom of space and layout enabled plant men to devise a "similar-process" system of flow control that rivals the motor car assembly line in efficiency.

Separated from the main structure are buildings for the forge shop, plating shop, power plant, and foundry. The latter is one of the most complete non-ferrous foundries to be found in any industrial plant. Designed by the National Engineering Company, the sand handling equipment and core oven installations are almost entirely mechanized.

Each division has its own air-conditioned and sound-proofed physical, chemical and metallurgical laboratories and experimental shops, with electronic controls and testing devices. Typical of the machinery already in use in the main shop is the new SIP Hydroptic Jig Borer, whose optical measuring system is the most accurate in the world.

The building is completely fireproofed, and all vaults are equipped with automatic CO_2 spray for preserving records from fire. Overhead conveyors, modern lighting, an auto-dial PBX telephone system, photographic darkrooms, a 500-seat cafeteria as modern as any Broadway restaurant, first aid rooms, and recreation areas are the last word in industrial planning.

Dorr Acquires Pan-American Engineering Co.

The Dorr Company has acquired rights to the metallurgical jigs and sewage aerators of the Pan-American Engineering Company which is now in process of liquidation. The design, production and marketing of this former Pan-American equipment has been taken over by The Dorr Company. W. G. Moore, formerly design engineer for the Pan-American Engineering Company, has become a member of The Door Company's staff and will soon take up his new duties as a member of the company's Engineering Department in New York.

New Territorial Sales Unit for Mack Trucks

Creation of a new Mack Truck Company territorial sales unit, to be known as the Southwestern Division and with headquarters at Dallas, is announced by A. C. Fetzer, vice-president. Included in this realignment of Mack's sales territory are the Company's already established districts at Dallas, Houston, Oklahoma City, and New Orleans. The territory covered by these districts includes all of the States of Texas, New Mexico, Oklahoma, Louisiana, the State of Arkansas, with the exception of Mississippi and Crittenden Counties, and the southern half of the State of Mississippi. It also includes the Republic of Mexico.

Heading Mack's new sales division is D. C. Wheeler, recently elected a vice-president of the company.

Link-Belt Opens Office In Duluth, Minnesota

Link-Belt Company, Minneapolis plant, announces the opening of a district sales office in Duluth, Minn., with headquarters at 422 Board of Trade Building, 301 West First St., Duluth, Minn.

Mr. John E. Morrison, formerly district sales engineer at Chicago and Minneapolis, has been appointed district manager in charge of the new office, and he will be assisted by Harold A. Ivarson, who has been transferred from the Link-Belt plant in Minneapolis.

The Duluth office is being established to better serve the materials handling and power transmission needs of the industries, mines and engineers in northeastern Minnesota, northern Wisconsin and the upper peninsula of Michigan.

New Distributor For American Manganese

American Manganese Steel Division of American Brake Shoe Company announces the appointment of the Whitehead Metal Products Company, Inc., as distributors of its complete line of Amsco welding products. This line consists of various types of rods and electrodes for hard facing and repair work, including the newly developed tungsten carbide rods.

The Whitehead Company operates warehouses in major cities in five Eastern states including New York, New Jersey, Pennsylvania, Massachusetts, and Maryland.

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Southwest

Continued from Page 80

be concentrated on property close to the Columbia Mountain fault. The mill is also to go on a seven-day schedule.

Expansion has begun at *U. S. Gypsum Company's* wall board manufacturing operations, Gerlach, Nevada. A 1,200' long plant of steel frame construction will be built for the manufacturing of various gypsum products. Housing for employees will be constructed, with the plans calling for 32 four-room units. To take care of the electric needs of this suddenly manufactured city, Sierra Pacific Power Company will run a 110-mile line of 60,000 volts from Reno to Gerlach. The present building materials shortage of gypsum on the west coast is hoped to be relieved as soon as production begins.

The old *Jumbo Extension Mine* will be rehabilitated and put back into production by Martin C. Duffy, owner. The mine is at Goldfield, Nevada, and has a three-compartment shaft which will be put into good shape down to the 700' level. A gallows frame is to be installed as well as other equipment. The Jumbo has been in operation only occasionally since 1914, when over $2,000,000 was taken from it. Duffy's program calls for working on the 790' level, which may have to be unwatered.

A power hoist and compressor have been installed at *Gold Seam Mining Company's* property 12 miles south of Tonopah, Nevada. The No. 1 shaft has been retimbered to the 200' level and drifting is under way from the No. 2 shaft along a vein showing increasing width and commercial values. A winze will be put down later to determine the depth of the ore and, if results are encouraging enough, another drift, 175' long, will link the two shafts. Orebodies on two levels of the No. 1 show good values.

In an effort to salvage the several million dollar investment of the *Eureka Corporation, Ltd.*, in lead-zinc properties near Eureka, Nevada, Ira B. Joraleman, consulting geologist, examined the properties and has offered several suggestions. He feels that orebodies exist above the 1,700' level which could be made workable within a year and a half by an expenditure of between $870,000 and $1,370,000. The ore below the 2,000' level, where uncontrollable amounts of water flow, which were the cause of the mine's shutdown, could be reached by gradual dewatering, using profits from the lead-zinc deposits probably existing on the 1,700' level. The first step, Joraleman said, was a concentrated churn drilling program from the surface and diamond drilling from the 800' level. If the mine can be made productive, it is expected to become one of the largest of its type in the country.

Shipments have resumed with ore from a new silver-lead strike at *Grand Deposit Mining Company's* property, Spring Valley, White Pine County, Nevada, according to Paul C. Lyon, president. The strike is in a section of ground under lease to Edgar Johnson and was made in a winze projected from the main crosscut on the 600' level. The orebody has been traced for 60' and still shows evidence of strong values. On the 500' level, other lessees have broken ore for shipment, and the company expects to lease still another section with known values. Three carloads of ore have been sent out so far. Additions to all working crews are planned.

The Gabbs magnesium project is now nearly geared to the point of turning out finished products. This is the operation, reported in detail before, which will process probably the largest deposit of magnesium ore in the country. The development of the deposits, which lie in northwestern Nye County, Nevada, is being done by *Basic Magnesium, Inc.*, and *Standard Slag Company* of Ohio.

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Glass Hat Announced By Bullard

After more than a year of development work and rigid testing, the E. D. Bullard Company has announced a new crown for the famous "hard-boiled hat." The material is resin - impregnated Fiberglas that under test has proved to be the strongest, most resilient crown ever built for a safety hat. This crown is impervious to moisture and acids; passes all dielectric tests. The crown is non-shattering, and non-deteriorating with age. Radiation tests show the Bullard white "hard-boiled hat" maintained a comparative coolness—inside to outside skin temperature—that was 11.7° F. better than any other safety hat tested. Other characteristics show improvement in all desirable qualities.

The most spectacular difference between the new "hard-boiled hat" and other safety hats lies in the ability of the manufacturer to produce the hat in practically any color desired. Standard colors are white and grey; others available in quantity orders. Colors are permanent; the pigment is impregnated all the way through the material.

Superior resistance to radiant heat is expected to lower incidence of sun and heat stroke among workers. The adjustable size sweatband to fit all head sizes and the six-second hammock sweatband change assembly are retained in the new models to reduce inventories.

Full information on the new Bullard Glass Hard-Boiled Hat is available from the MINING WORLD, 121 Second St., San Francisco, Calif.

Railroad Ties Sealed By New Koppers Compound

Development by Koppers Company, Inc., of a new coal-tar sealing compound which is expected to lengthen materially the life of railroad cross ties and open-deck bridge ties has been announced by M. G. Sturrock, manager of the Tar Products Technical Section, and R. H. Bescher, manager of the Wood Preserving Technical Department of Koppers.

According to Koppers' research personnel, Compound No. 16 has proven more economical in application than other bituminous compounds which require a preliminary priming treatment. Although melted pitch has been used experimentally by some roads to fill large checks in ties, it is felt that Compound No. 16 will prove vastly superior in that it fills the existing checks and splits while also covering the entire exposed surface of the tie to prevent further weathering. The need for additional labor and equipment to heat pitch for application and the danger of burns from splashing of the hot material are eliminated in tie sealing with the new cold-applied Koppers compound.

Victor Enters Hard-Surfacing Rod Field

The Victor Equipment Co. of San Francisco has announced the purchase of the business and assets of the Los Angeles manufacturing firm of Mills Alloys, Inc., well known producers of all types of blasting nozzles and all types of tungsten carbide hard-surfacing rod. The company has already laid plans to add the most modern rod rolling and mill equipment to the seven electric furnaces acquired by the purchase, with a view to producing a complete line of hard-surfacing welding rods.

Victor also plans to augment its sales outlets by establishing dealers for its new line of hard-surfacing rod and blasting nozzles.

THE MARKET PLACE

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1—24", 15' centers, motorized
1—30", 70' centers, motorized
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1—24" x 5'6" centers magnetic pulley feeder conveyor, with charger

AGITATORS
4—6' x 8' center Well Agitators, wood tanks, steel "A" frames, with 15 HP vertical motors
3—10' x 9' center Well Agitators, wood tanks, steel "A" frames, with 20 HP vertical motors

PUMPS—CENTRIFUGAL
2—2RV-1 Ingersoll-Rand motor mounted
2—1½RV-3 Ingersoll-Rand motor mounted
1—2RVH-7½ Ingersoll-Rand motor mounted
1—1½RVH-10 Ingersoll-Rand motor mounted
4—2RVH-15 Ingersoll-Rand motor mounted
1—3RVH-25 Ingersoll-Rand motor mounted
1—2" Allen-Sherman-Hoff Hydroseal Slurry Pump—motorized
2—6" Allen-Sherman-Hoff Hydroseal Slurry Pumps—motorized
1—8" Allen-Sherman-Hoff Hydroseal Slurry Pump—motorized

CLASSIFIERS
1—6' x 22' Dorr Type Duplex Rake Classifier
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FILTERS
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1—36" x 7'—riveted
1—36" x 8'—riveted
1—30" x 6'—riveted
1—30" x 10'—riveted

PUMPS—SAND
1—2" Split Case Willey Pump—rubber lined—motorized
3—2" Willey Pumps — solid bowls — rubber lined — motorized
4—2" Willey Pumps—motorized

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1—Sullivan #LW-6, on steel wheels, with drifter, etc.
1—Ingersoll-Rand on pneumatic tires, with drifter, etc.

DIESEL GENERATORS
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New Diesel-Electric Shuttle Car for Joy

The Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa., announces the development of a new diesel-electric shuttle car. This model is said to be exceptionally powerful and can operate on steeper grades than either battery or cable-reel cars. Since it carries its own power source, the car is extremely flexible in operation. The fuel capacity is amply great to provide rated power throughout the full shift.

The 60-E-11, as the car is designated, is powered by a single diesel-generator set. Engineers of the engine manufacturer collaborated with Joy engineers to produce a lightweight, compact engine, especially suited for shuttle car use.

Specifications of the 60-E-11 are as follows: Height, 60"; capacity, 285 cu. ft.; capacity with 6" sideboards, 330 cu. ft.; load limit, 14 tons; length, 24'0"; width, 7'10"; ground clearance, 11½".

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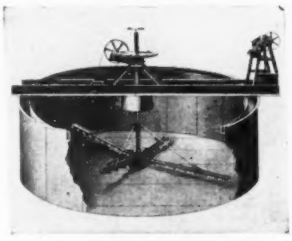

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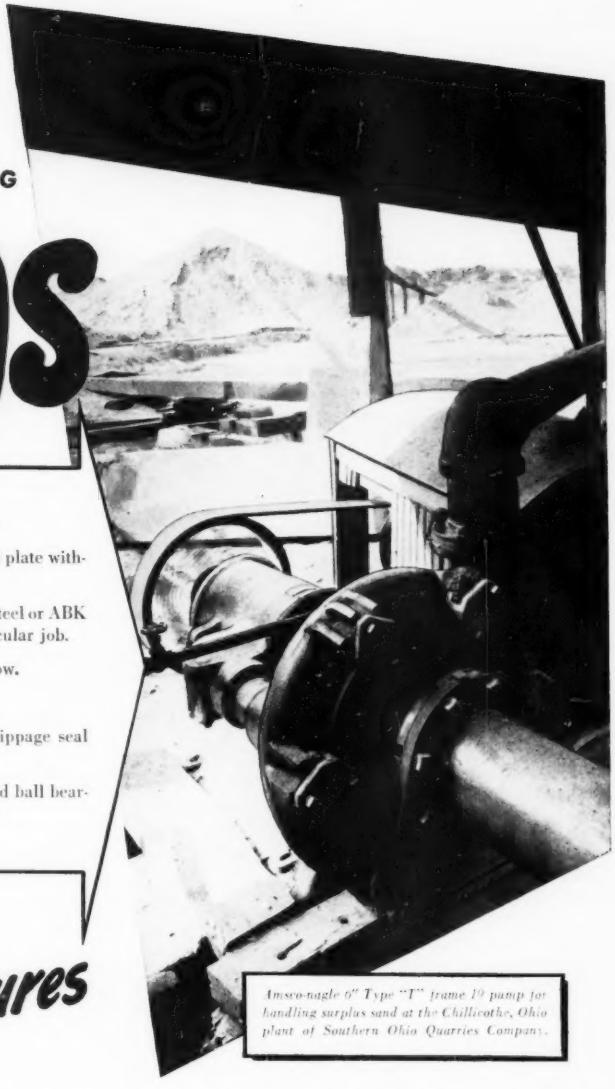

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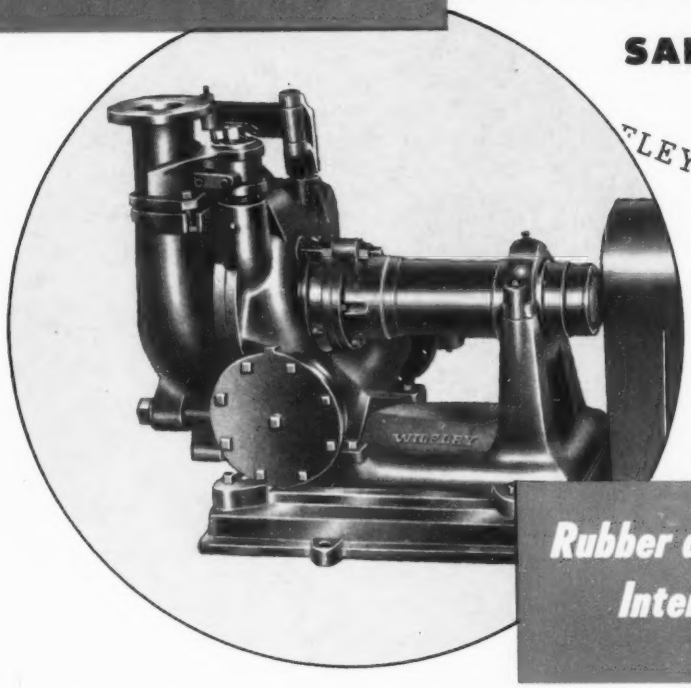

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